18351 U.S. PTO .

فالعال سدالماسا



Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE

Serial No: 09/972,805
Filed: October 5, 2001
Docket No.: 416272061200 SET 1 OF 3
REPLACEMENT FIGS. 1 of 32

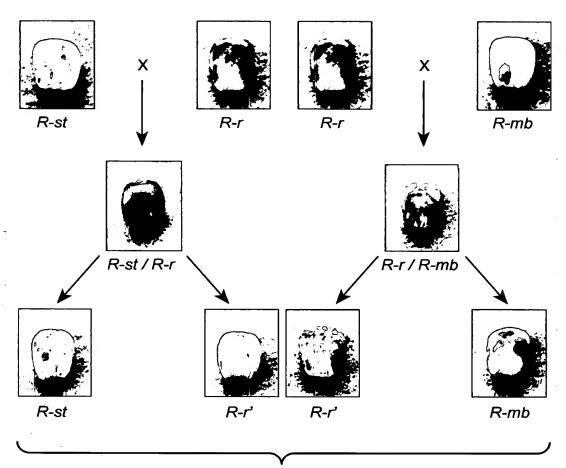
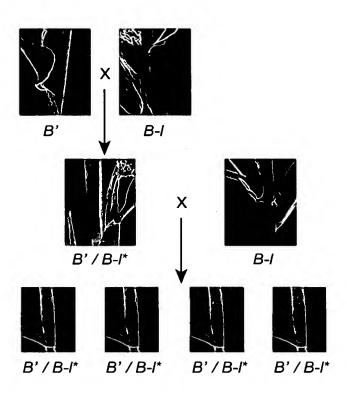


FIG. 1A

Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805
Filed: October 5, 2001
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REPLACEMENT FIGS. 2 of 32



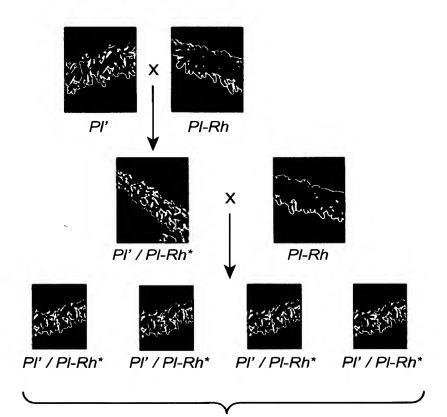


FIG. 1B

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REPLACEMENT FIGS. 3 of 32

Paramutable

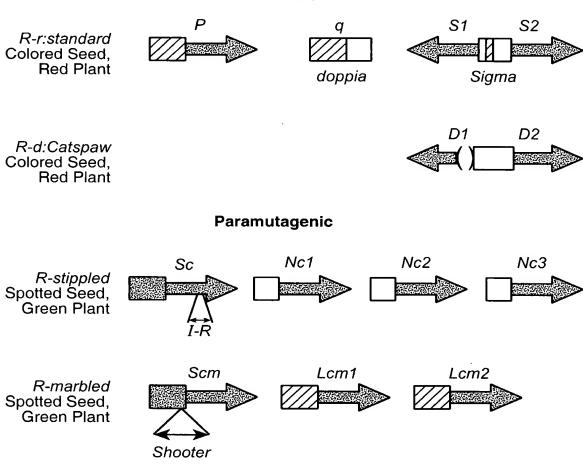


FIG. 2A

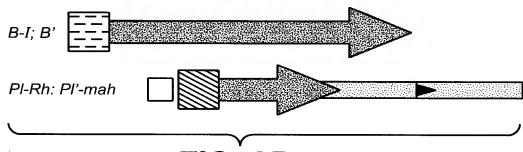


FIG. 2B

GENE SILENCING IN MAIZE

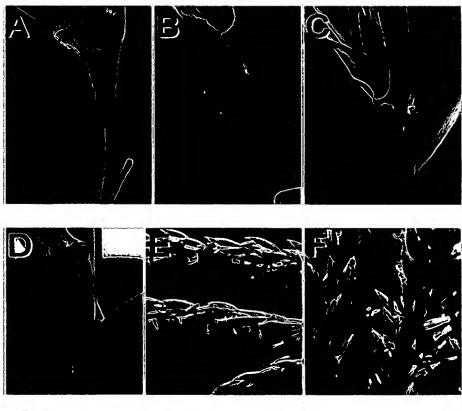
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REPLACEMENT FIGS. 4 of 32

FIG. 3A FIG. 3B FIG. 3C

B' Mop1/mop1-1 B' mop1-1/mop1-1 B-I Mop1/Mop1



B' Sectors in a B' mop1-1 Plant

Pl' Mop1 / -

Pl' mop1-1 / mop1-1

FIG. 3D

FIG. 3E FIG. 3F

mop1-1 B' mop1-1 Gametes produced if B' is heritably altered to B-I (B' — <u>B-I Mop1</u> _____ <u>B-I Mop1</u> B-I mop1-1 X Dark B-I Mop1 B-I mop1-1 plants Gametes produced if B' is not heritably altered to B-I (B' - X - B-I): <u>B-I Mop1</u> ______ (B-I)' <u>Mop1</u> B'mopl-1 X Light B-I Mop1 mop1-1 plants FIG. 4A <u>Pl' mop1-1</u> Pl' mop1-1 Gametes produced if Pl' is heritably altered to Pl-Rh (Pl' ---- Pl-Rh): Pl-Rh mop1-1 X <u>Pl-Rh Mop1</u> → <u>Pl-Rh Mop1</u> Dark Pl-Rh Mop1 Pl-Rh mop1-1 anthers Gametes produced if Pl' is not heritably altered to Pl-Rh ($Pl' - X \rightarrow Pl-Rh$): Pl' mop1-1 X (Pl-Rh)' Mop1 Pl-Rh Mopl Light Pl-Rh Mop1 Pl'mop1-1 anthers

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REPLACEMENT FIGS. 5 of 32

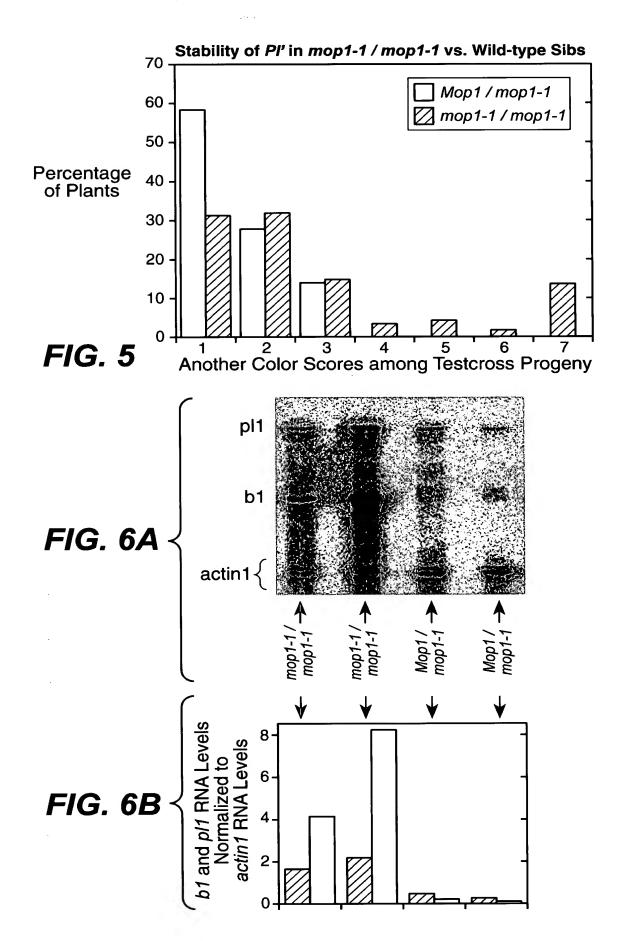
FIG. 4B

Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE
Serial No. 09/972 805

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REPLACEMENT FIGS. 6 of 32



GENE SILENCING IN MAIZE

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REPLACEMENT FIGS. 7 of 32

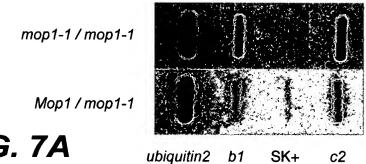
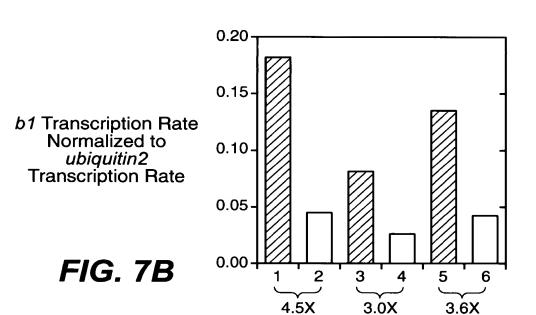
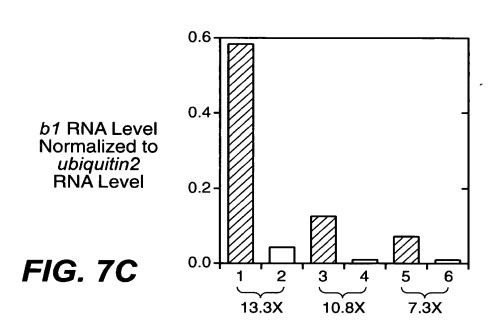


FIG. 7A





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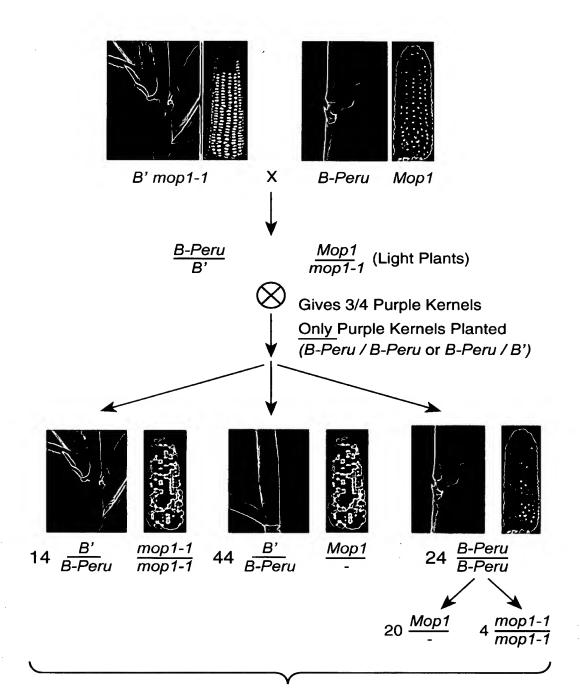


FIG. 8

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REPLACEMENT FIGS. 9 of 32

<u>B' mop1-1</u> Mop1 B-I B' mop1-1 X b-K55 mop1-1 Dark plants Dark plants B' mop1-1 <u>B' mop1-1</u> B'*mop1-1* mop1-1 **B-I** mop1-1 B-I Mop1 b-K55 mop1-1 b-K55 Mop1 Dark plants Light plants Dark plants Light plants

Testcross (by B-Peru/B-I Mop1/Mop1 tester-diagram shows only B-Peru gametes of tester)

Gametes produced if paramutation is prevented $(B-I - X \rightarrow B')$:

50% B' mopl-1 X B-Peru Mopl
$$\longrightarrow$$
 B' mopl-1 Light B-Peru Mopl plants

Gametes produced if paramutation occurred $(B-I \longrightarrow B')$:

FIG. 9

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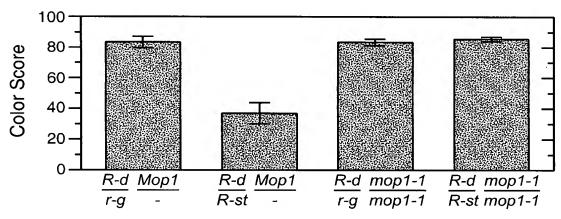
Docket No.: 416272061200 SET 1 OF 3 REPLACEMENT FIGS. 10 of 32

 B-bar B'	 <u>Mop1</u> mop1-1	X	<u>R-d</u> r-g		<u>Mop1</u> mop1-1

Four genotypes of interest among R-d/- Pl'/- progeny:

<u>3</u>	<u>R-d</u>	<u>Mop1</u>	Light plant
16	r-g	-	
<u>3</u>	R-d	<u>Mop1</u>	Light plant
16	R-st	-	
<u>1</u>	<u>R-d</u>	<u>mop1-1</u>	Dark plant
16	r-g	mop1-1	
<u>1</u>	<u>R-d</u>	<u>mop1-1</u>	Dark plant
16	R-st	mop1-1	

FIG. 10A



Parental Genotypes

FIG. 10B

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REPLACEMENT FIGS. 11 of 32





FIG. 11B

FIG. 11C

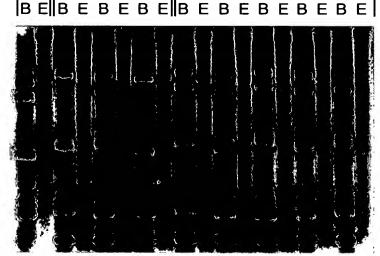


FIG. 11D

B' B' Mop1 / mop1-1 B' mop1-1 / mop1-1

BEBEBEBEBEBE

FIG. 12A



B' B' Mop1 / mop1-1

B' mop1-1 / mop1-1

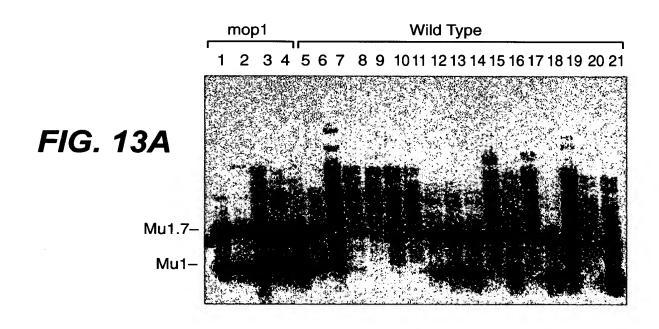
нм нм нм нм нм нм нм нм нм

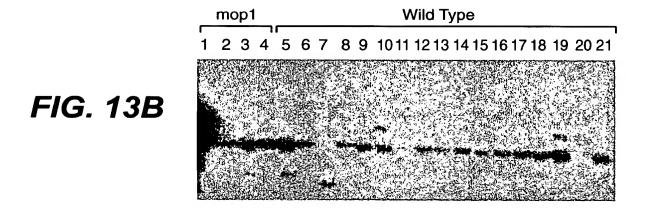
FIG. 12B

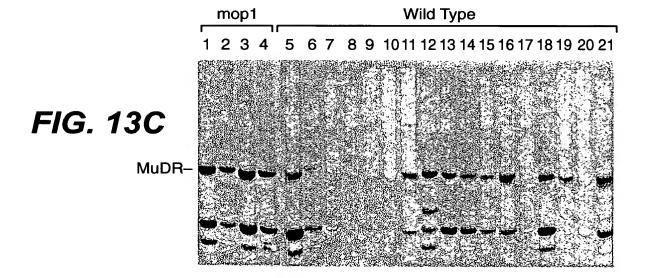


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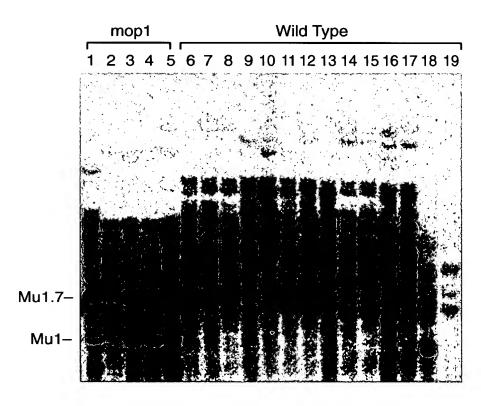


FIG. 14A

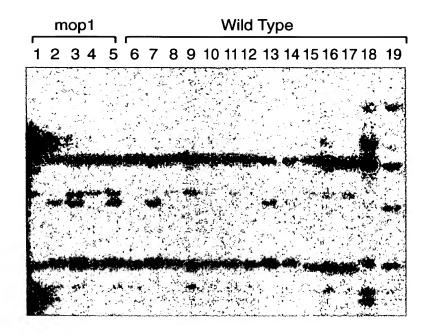


FIG. 14B

Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805

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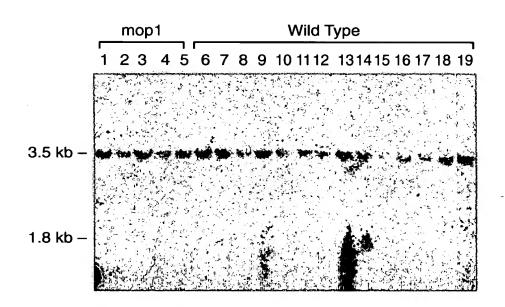


FIG. 14C

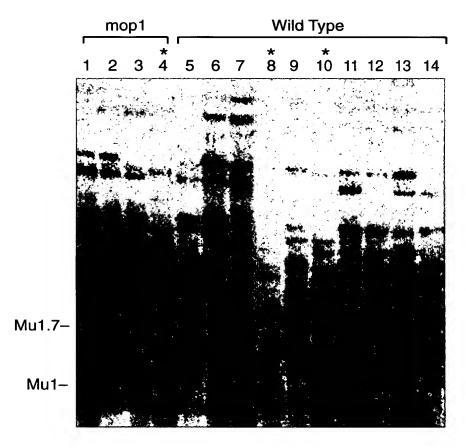
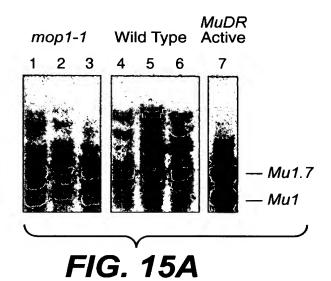


FIG. 14D

Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805

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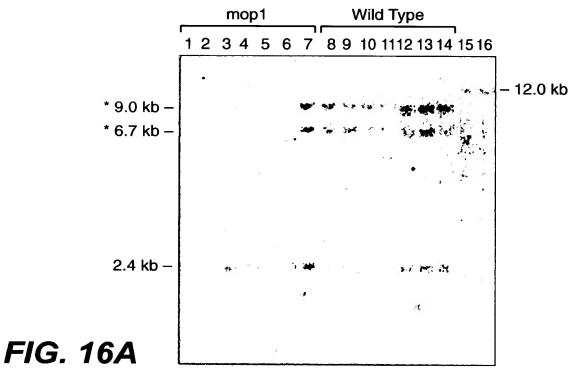
MuDR mop1-1 Wild Type Active 2 5 7 6 MuDR FIG. 15B

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ApaI / BamHI Digest

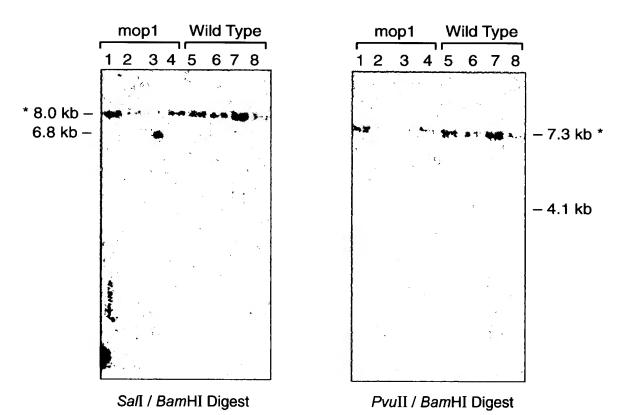
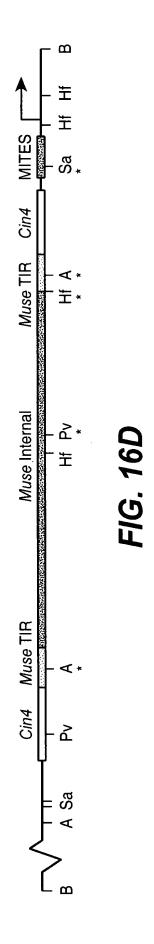


FIG. 16B

FIG. 16C

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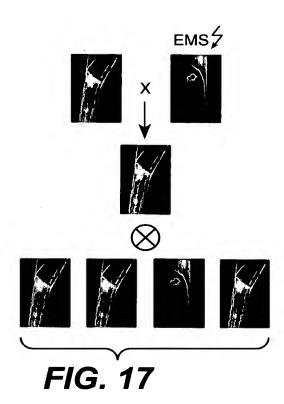




FIG. 18A

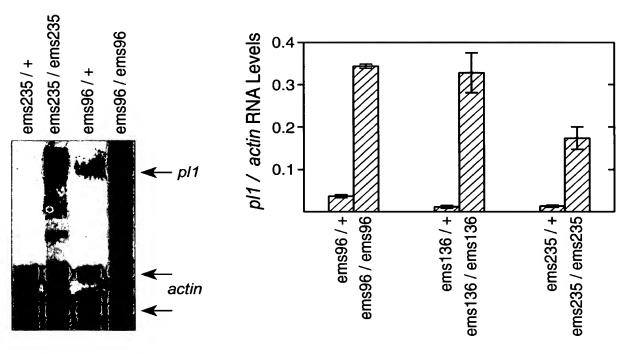


FIG. 18B

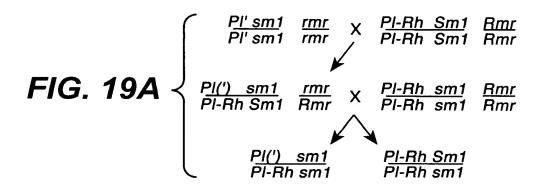
FIG. 18C

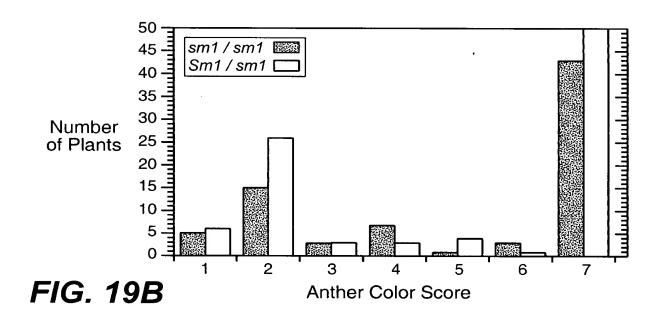
GENE SILENCING IN MAIZE

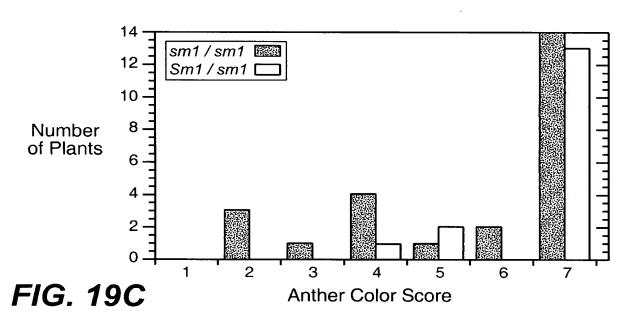
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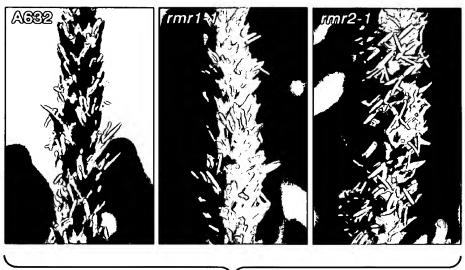
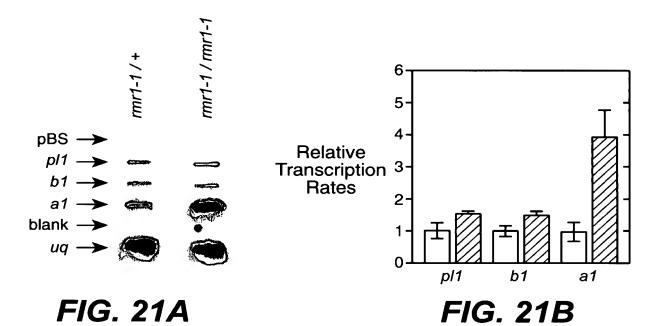


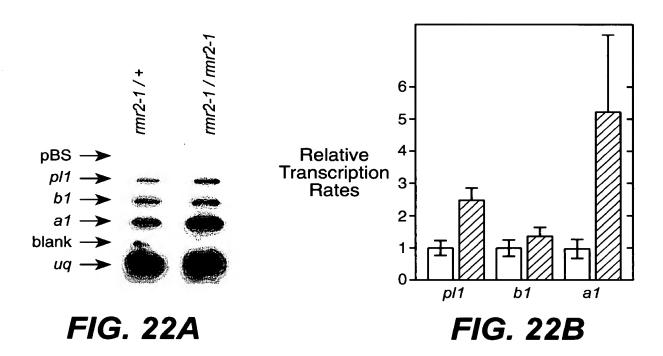
FIG. 20

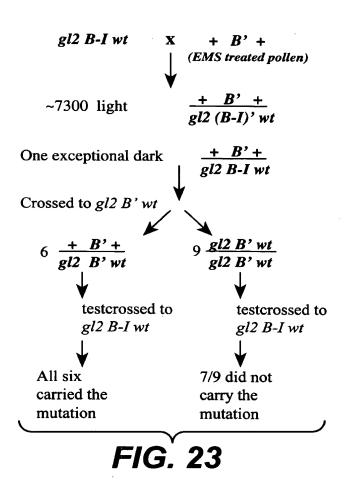


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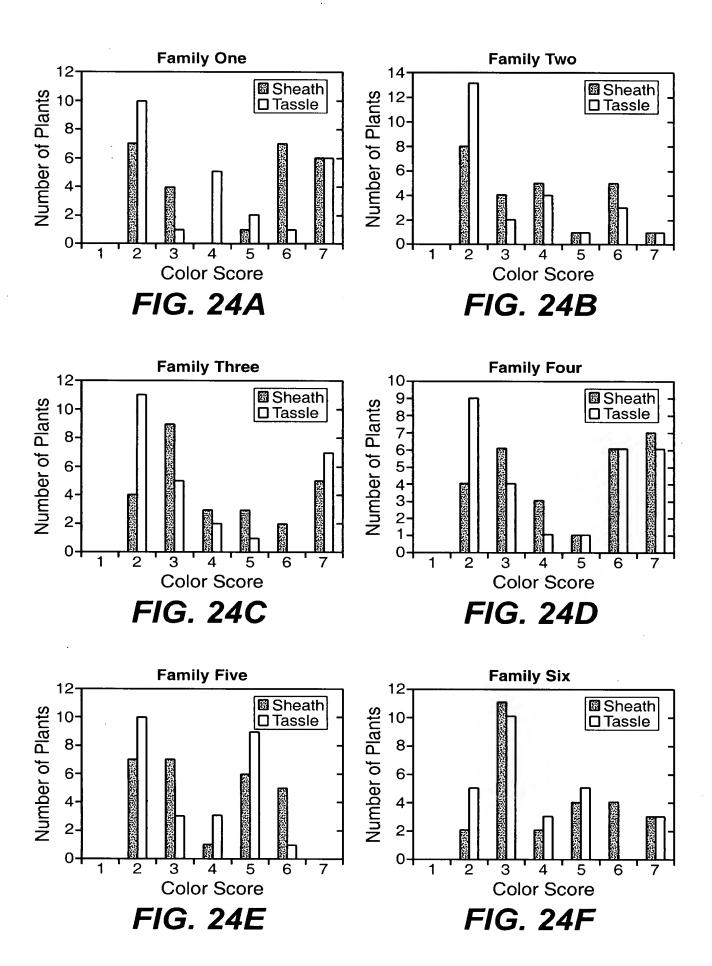


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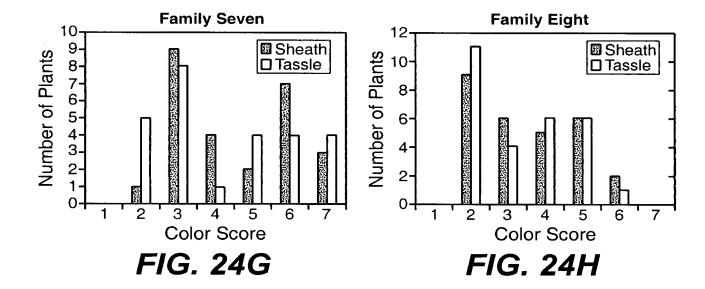
Docket No.: 416272061200 SET 1 OF 3

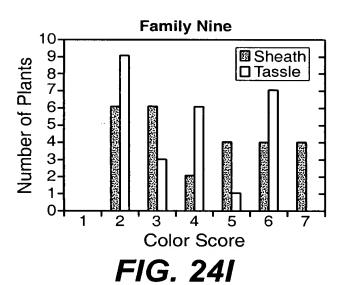
REPLACEMENT FIGS. 22 of 32



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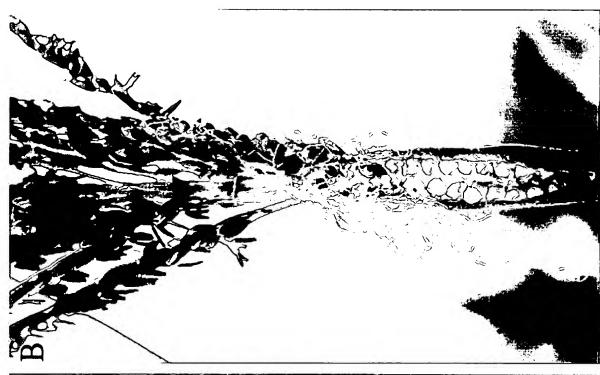




FIG. 25B

FIG. 25A

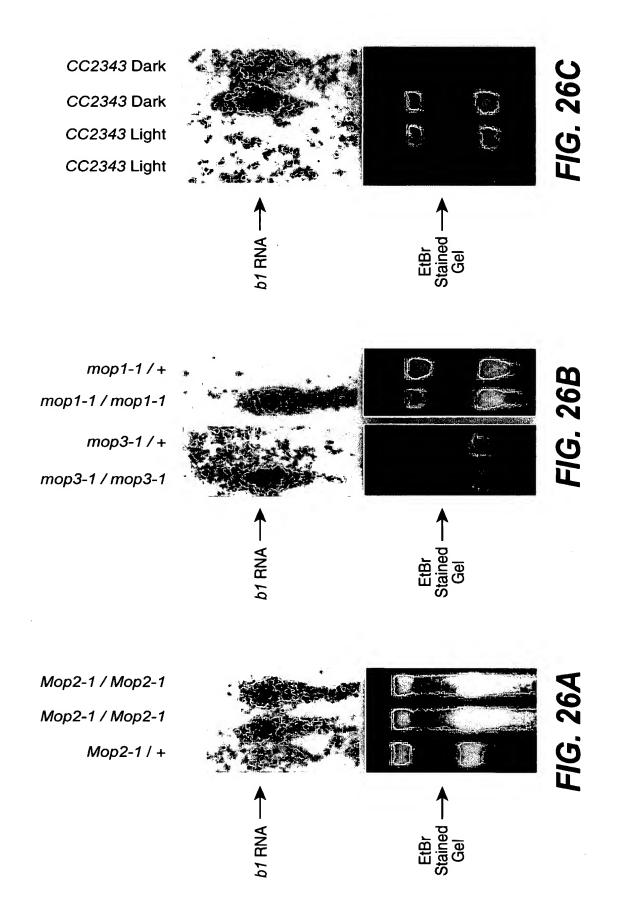
Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE

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Filed: October 5, 2001

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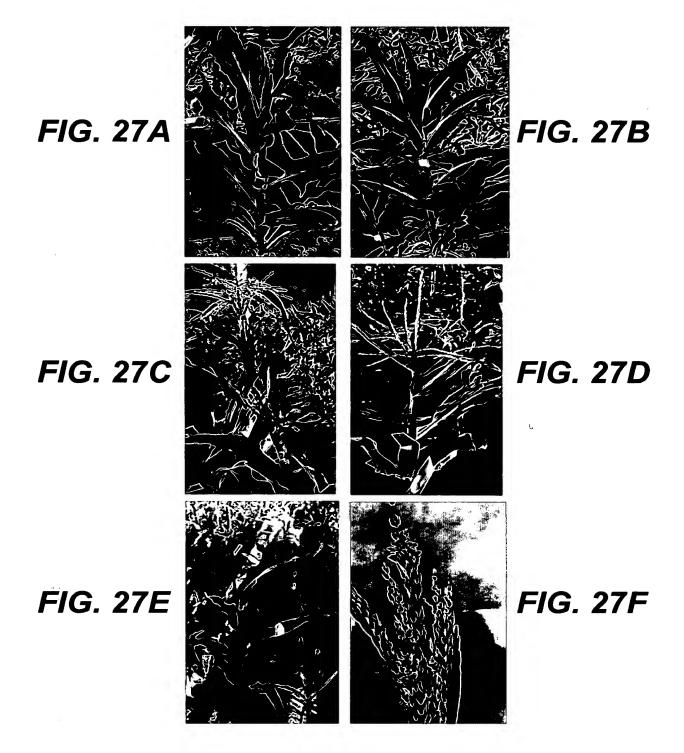
REPLACEMENT FIGS. 25 of 32



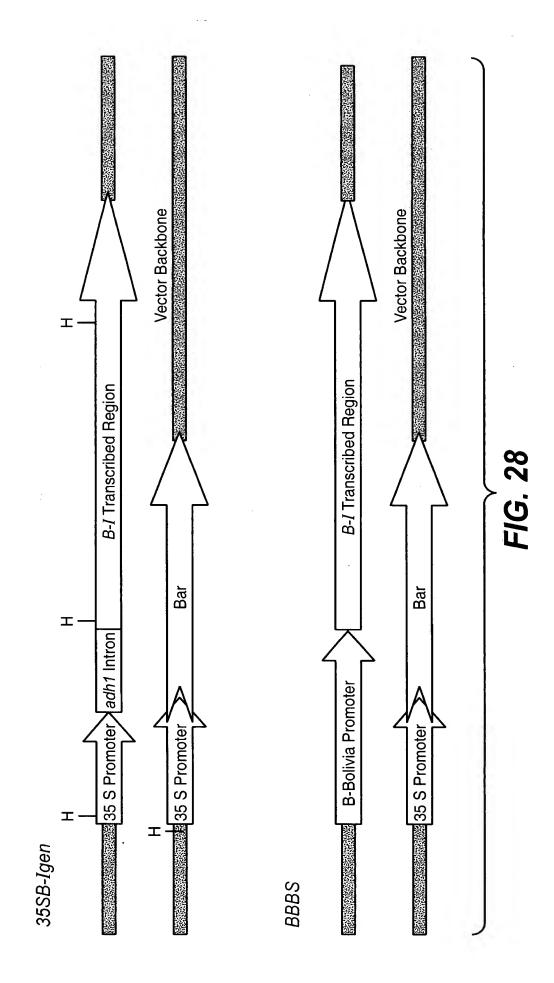
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FIG. 29A



B' Mop2-1 / mop2 B' Mop2-1 / Mop2-1 35SB-I

FIG. 29C



B' mop1-1 / mop1-1 B' Mop1 / mop1-1 rmr1-1 / rmr1-1 35SB-I





FIG. 29B

rmr2-1 / rmr2-1 Rmr2 / rmr2-1 35SB-I

FIG. 29D



Rmr1 / rmr1-1 35SB-I



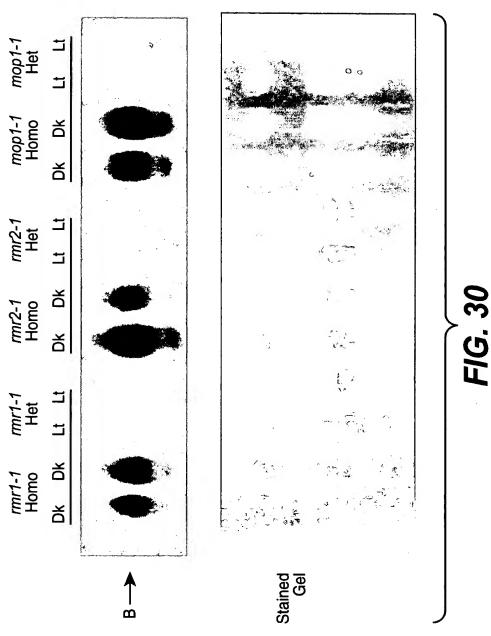
BBBS

Rmr2 / rmr2-1

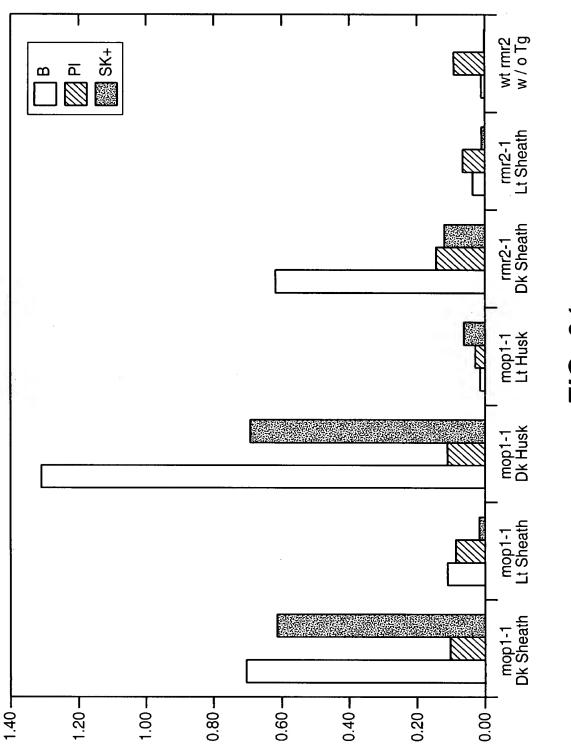
rmr2-1 / rmr2-1

FIG. 29E

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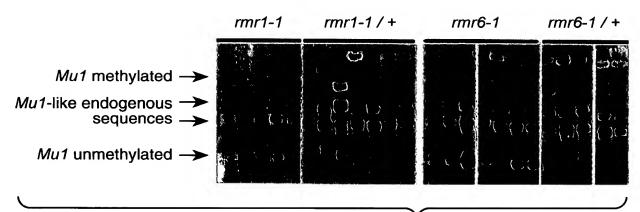


FIG. 32A

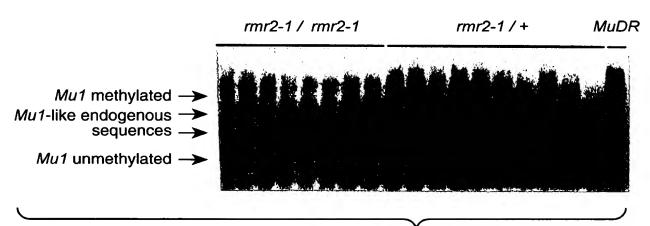


FIG. 32B

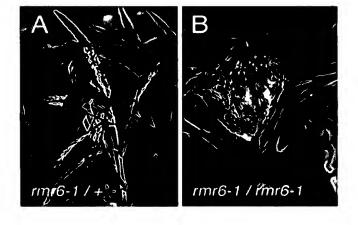


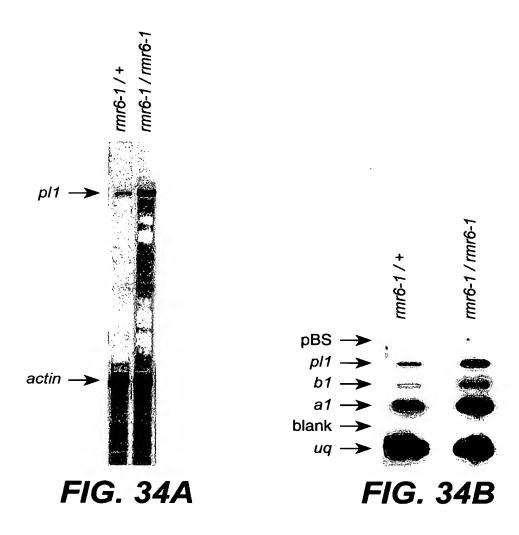
FIG. 33A FIG. 33B

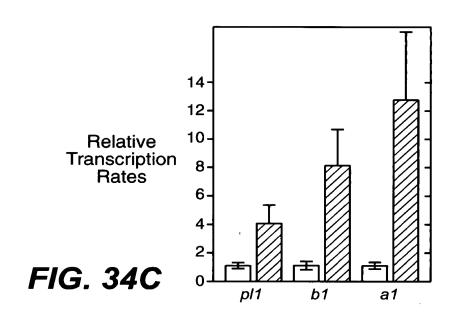
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REPLACEMENT FIGS. 32 of 32



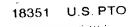


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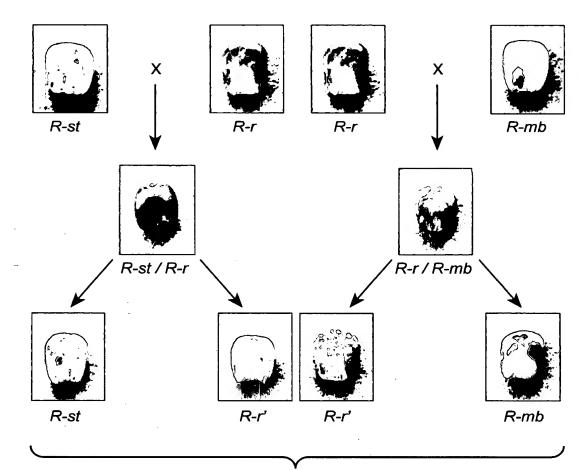
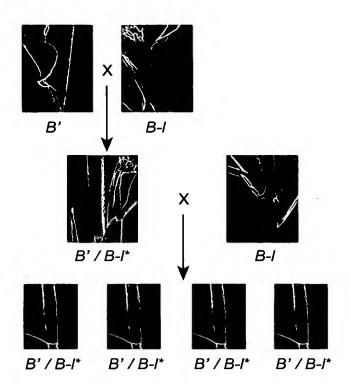


FIG. 1A

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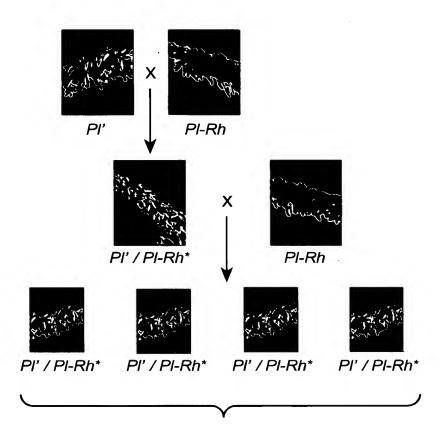


FIG. 1B

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Paramutable

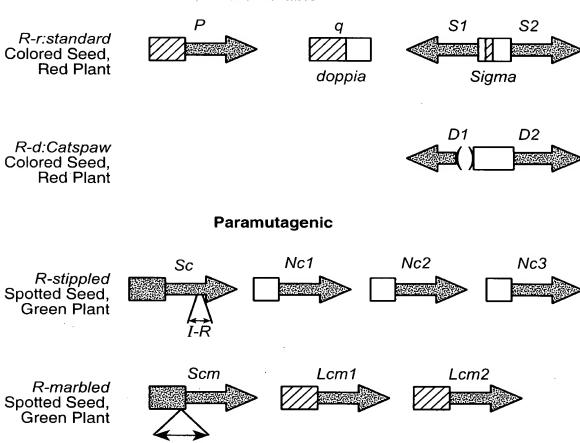


FIG. 2A

Shooter

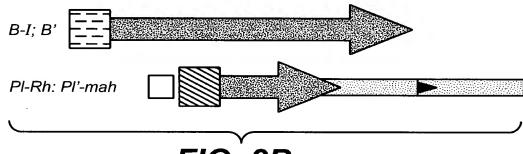


FIG. 2B

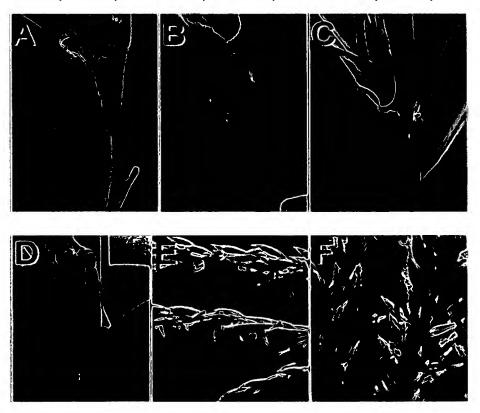
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FIG. 3A FIG. 3B FIG. 3C

B' Mop1/mop1-1 B' mop1-1/mop1-1 B-I Mop1/Mop1



B' Sectors in a B' mop1-1 Plant

Pl' Mop1 / -

Pl' mop1-1 / mop1-1

FIG. 3D FIG. 3E FIG. 3F

mop1-1 B' mop1-1 Gametes produced if B' is heritably altered to B-I (B' — <u>B-I Mop1</u> _____ <u>B-I Mop1</u> B-I mop1-1 X Dark B-I mop1-1 B-I Mop1 plants Gametes produced if B' is not heritably altered to B-I $(B' - X \rightarrow B-I)$: B' mop1-1 X <u>B-I</u> <u>Mop1</u> Light B-I Mop1 mop1-1 plants FIG. 4A <u>Pl' mop1-1</u> Pl' mop1-1 Gametes produced if Pl' is heritably altered to Pl-Rh ($Pl' \longrightarrow Pl-Rh$): Pl-Rh mop1-1 X <u>Pl-Rh Mop1</u> <u>Pl-Rh Mop1</u> Dark Pl-Rh Mop1 Pl-Rh mop1-1 anthers Gametes produced if Pl' is not heritably altered to Pl-Rh ($Pl' - X \rightarrow Pl-Rh$): Pl' mop1-1 X Pl-Rh Mop1 <u>(Pl-Rh)' Mopl</u> Light Pl-Rh Mop1 Pl'mop1-1 anthers

Title: GENETIC FUNCTIONS REQUIRED FOR

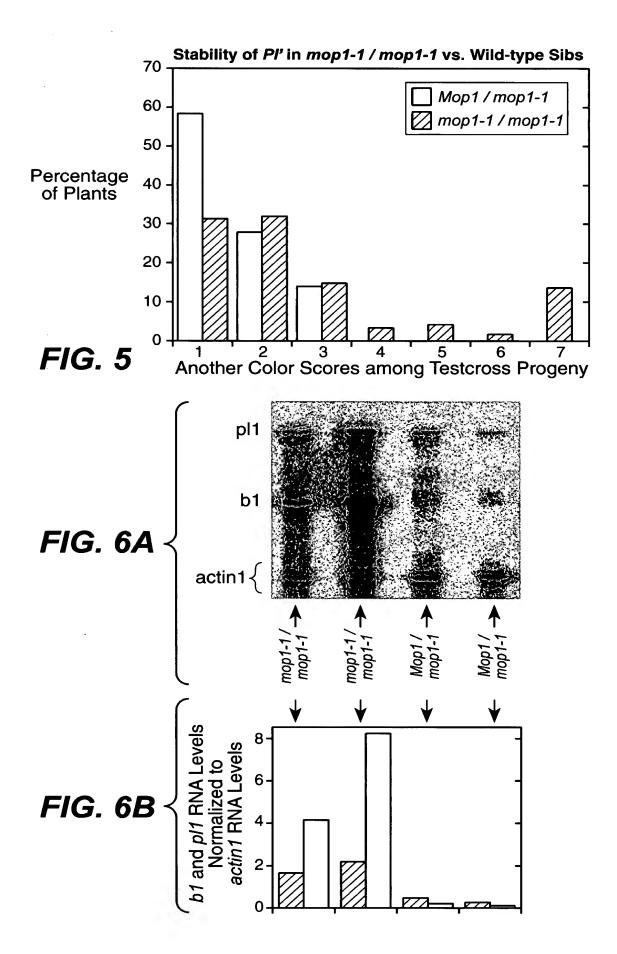
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REPLACEMENT FIGS. 5 of 32

FIG. 4B

Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805
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REPLACEMENT FIGS. 6 of 32



Title: GENETIC FUNCTIONS REQUIRED FOR

GENE SILENCING IN MAIZE Serial No: 09/972,805

Filed: October 5, 2001 Docket No.: 416272061200 SET 2 OF 3

REPLACEMENT FIGS. 7 of 32

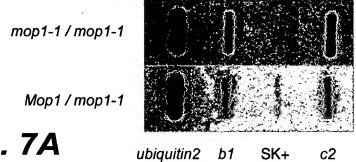
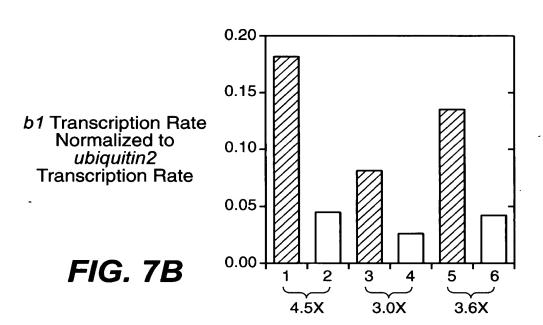
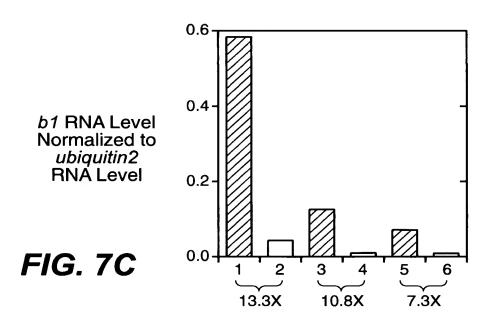


FIG. 7A





Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805
Filed: October 5, 2001
Docket No.: 416272061200 SET 2 OF 3
REPLACEMENT FIGS. 8 of 32

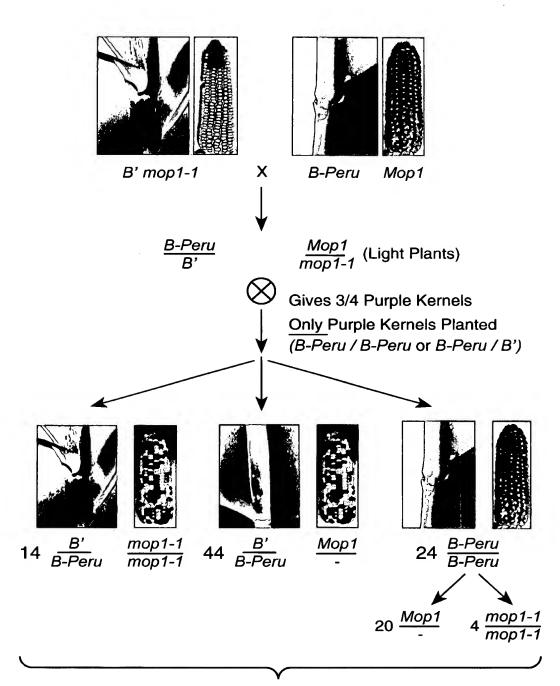
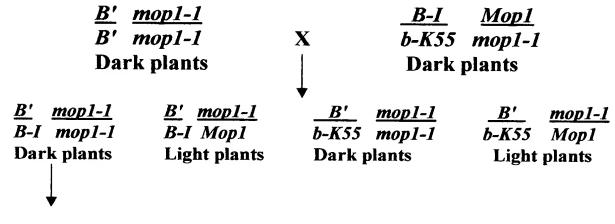


FIG. 8

Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE
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REPLACEMENT FIGS. 9 of 32



Testcross (by B-Peru/B-I Mop1/Mop1 tester-diagram shows only B-Peru gametes of tester)

is prevented (B-I → X → B'):

50% B' mop1-1 X B-Peru Mop1 → B' mop1-1 Light plants

50% B-I mop1-1 X B-Peru Mop1 → B-I mop1-1 Dark B-Peru Mop1 plants

Gametes produced if paramutation occurred $(B-I \longrightarrow B')$:

Gametes produced if paramutation

100% B' mop1-1 X B-Peru Mop1 \longrightarrow B' mop1-1 Light B-Peru Mop1 plants

FIG. 9

Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805 Filed: October 5, 2001

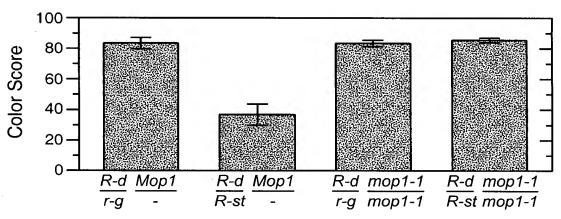
Docket No.: 416272061200 SET 2 OF 3

REPLACEMENT FIGS. 10 of 32

Four genotypes of interest among R-d/- Pl'/- progeny:

<u>3</u>	<u>R-d</u>	<u>Mop1</u>	Light plant
16	r-g	-	
<u>3</u>	<u>R-d</u>	<u>Mop1</u>	Light plant
16	R-st	-	
<u>1</u>	<u>R-d</u>	<u>mop1-1</u>	Dark plant
16	r-g	mop1-1	
<u>1</u>	<u>R-d</u>	<u>mop1-1</u>	Dark plant
16	R-st	mop1-1	

FIG. 10A



Parental Genotypes

FIG. 10B

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REPLACEMENT FIGS. 11 of 32





FIG. 11B

FIG. 11C

FIG. 11D

B' B' Mop1 / mop1-1 B' mop1-1 / mop1-1 BEBEBEBEBEBE

FIG. 12A

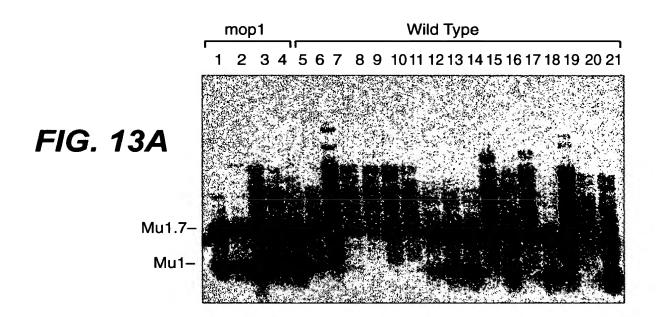


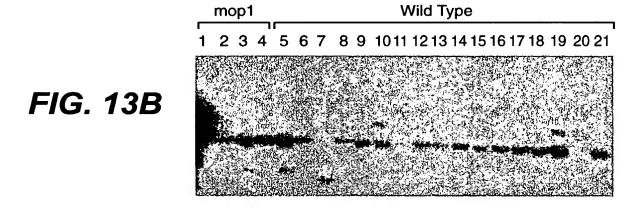
FIG. 12B

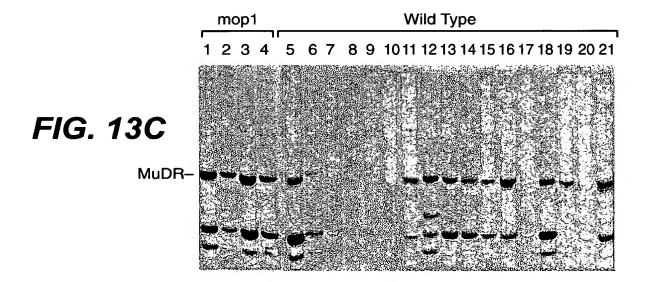
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REPLACEMENT FIGS. 12 of 32







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REPLACEMENT FIGS. 13 of 32

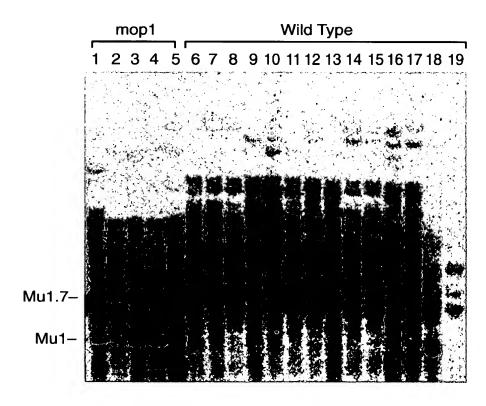


FIG. 14A

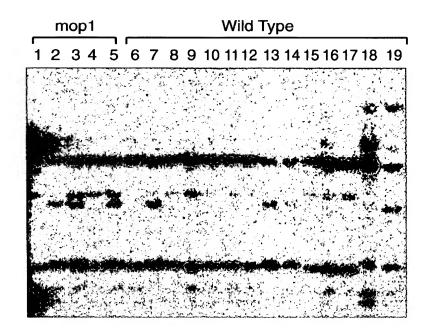


FIG. 14B

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REPLACEMENT FIGS. 14 of 32

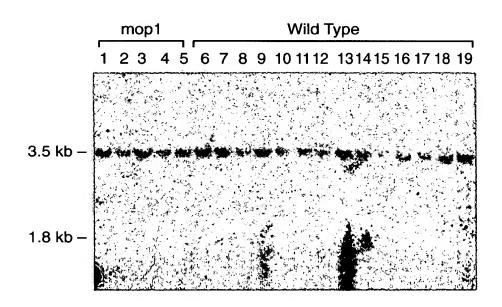


FIG. 14C

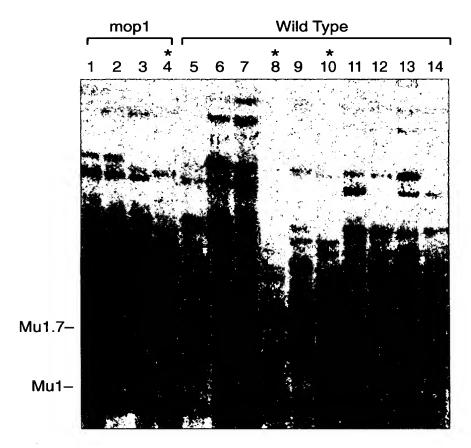
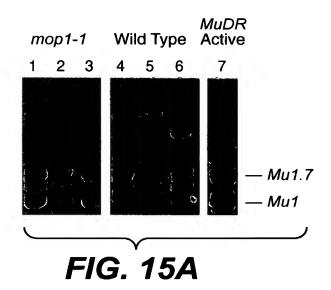


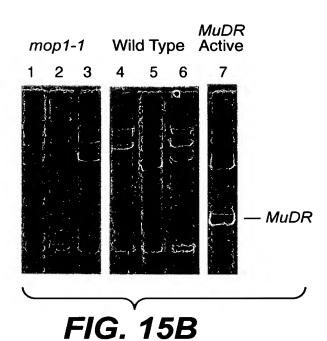
FIG. 14D

Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805

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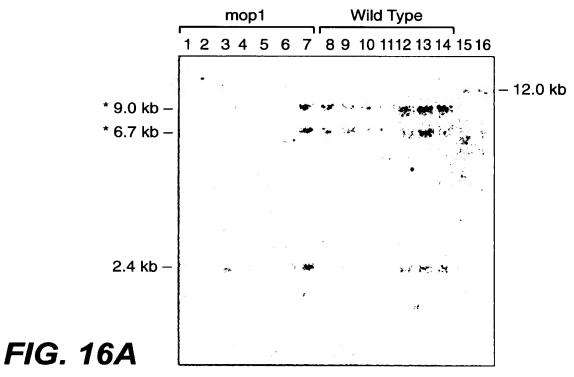




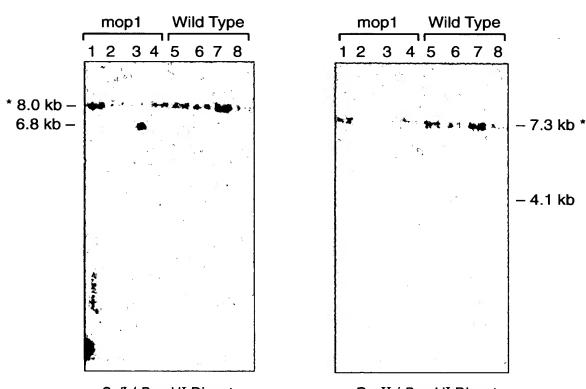
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REPLACEMENT FIGS. 16 of 32



ApaI / BamHI Digest



Sall / BamHI Digest

FIG. 16B

PvuII / BamHI Digest

FIG. 16C

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REPLACEMENT FIGS. 17 of 32 ω 茔 Cin4 Muse TIR ₩ # Muse Internal Muse TIR Cin4 - ≧

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REPLACEMENT FIGS. 18 of 32

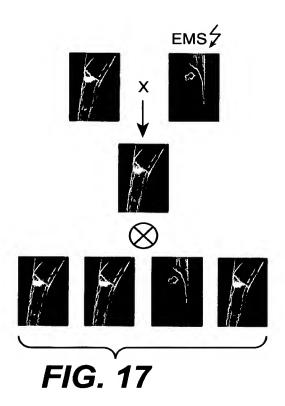
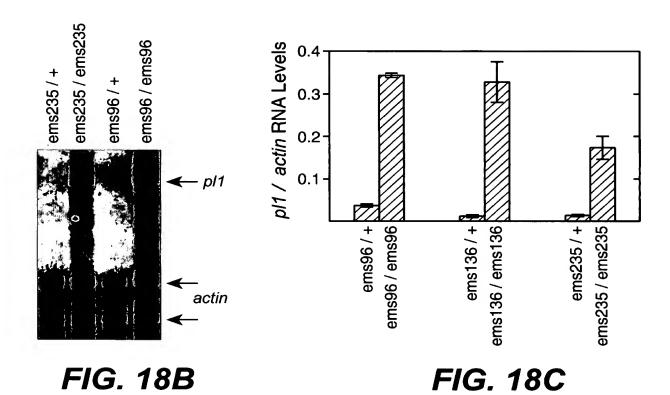




FIG. 18A



Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE
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REPLACEMENT FIGS. 19 of 32

 $FIG. 19A \begin{cases} P\underline{l' sm1} & \underline{rmr} \\ Pl' sm1 & rmr \\ Pl' sm1 & rmr \\ Pl-Rh & Sm2 & Rmr \\$

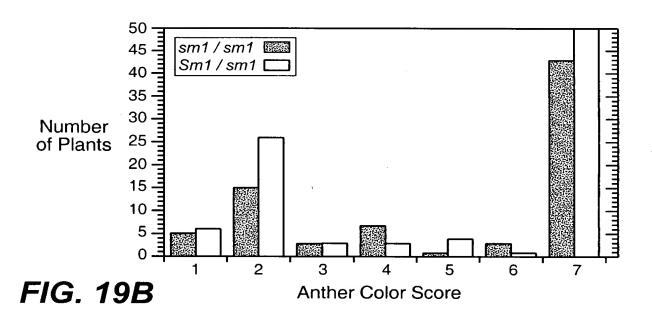
PI(')

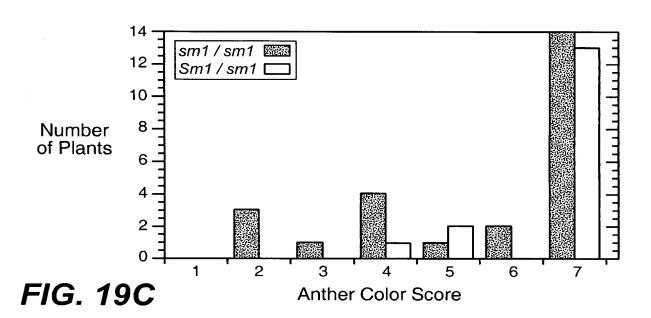
sm1

PI-Rh sm1

PI-Rh Sm1

PI-Rh sm1





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REPLACEMENT FIGS. 20 of 32

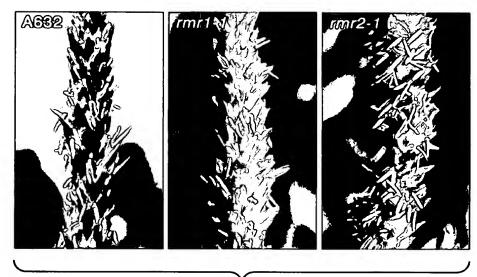
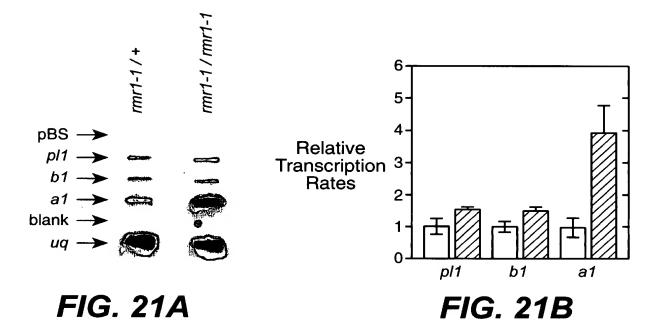


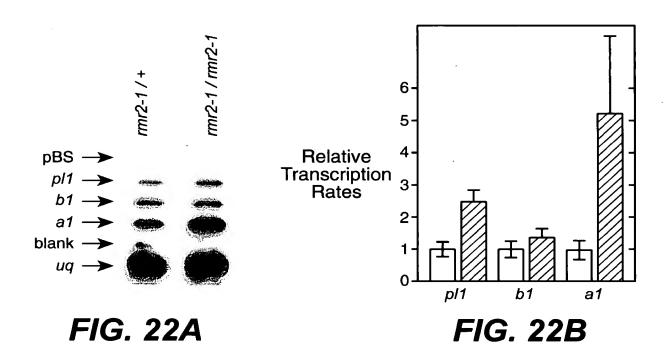
FIG. 20

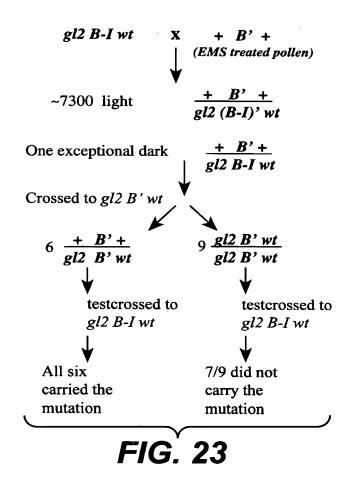


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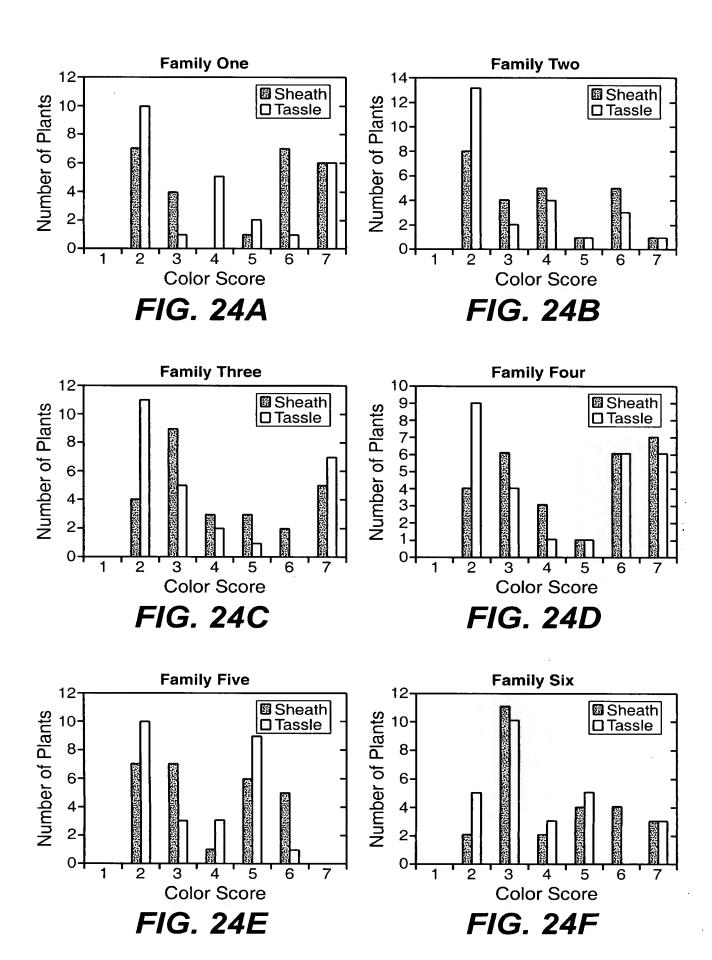
Title: GENETIC FUNCTIONS REQUIRED FOR

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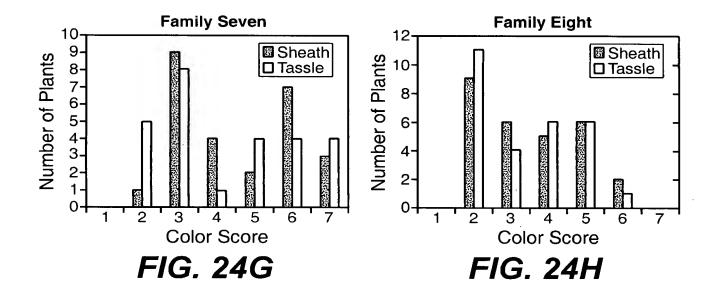
Filed: October 5, 2001

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REPLACEMENT FIGS. 22 of 32



Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805 Filed: October 5, 2001 Docket No.: 416272061200 SET 2 OF 3 REPLACEMENT FIGS. 23 OF 32



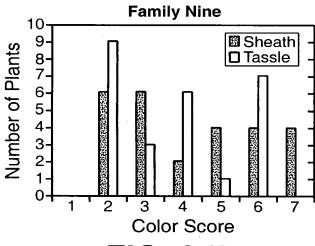


FIG. 241

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REPLACEMENT FIGS. 24 OF 32

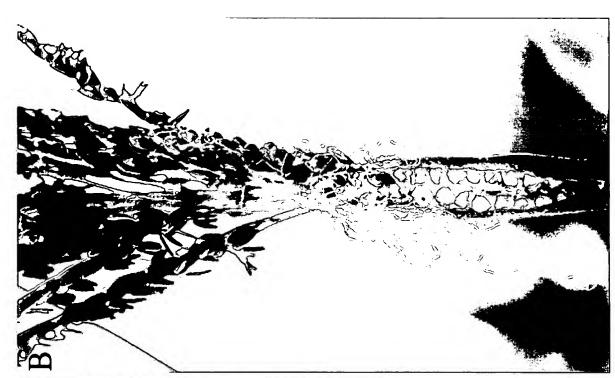




FIG. 25B

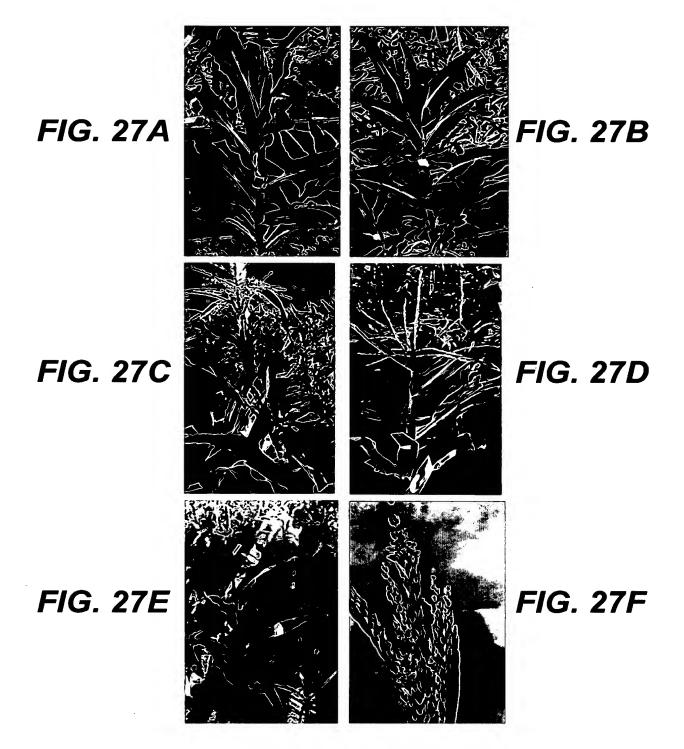
FIG. 25A

Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805 Filed: October 5, 2001 Docket No.: 416272061200 SET 2 OF 3 REPLACEMENT FIGS. 25 of 32 CC2343 Dark FIG. 26C CC2343 Dark CC2343 Light CC2343 Light *b1* RNA → mop1-1/+ FIG. 26B mop1-1 / mop1-1 mop3-1/+ mop3-1 / mop3-1 61 RNA — Mop2-1 / Mop2-1 Mop2-1 / Mop2-1 Mop2-1/+*b1* RNA →

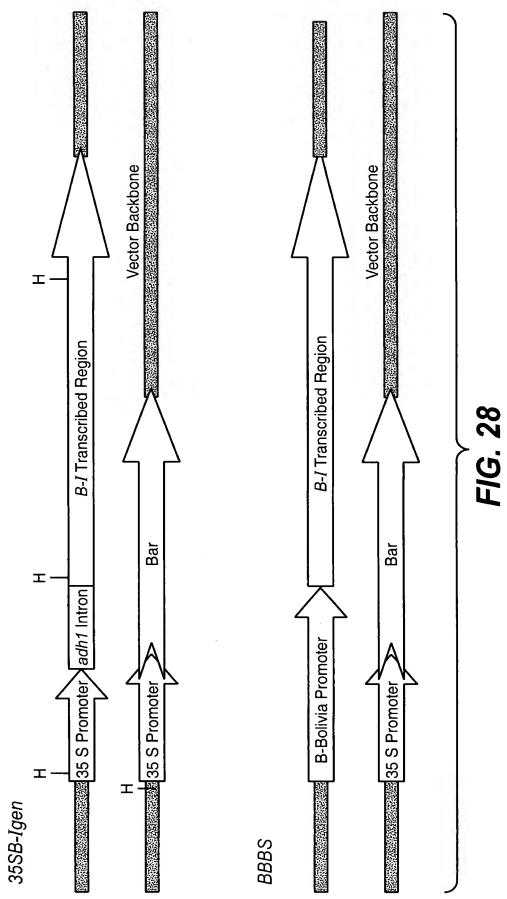
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REPLACEMENT FIGS. 26 of 32



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REPLACEMENT FIGS. 28 of 32

FIG. 29A



B' Mop2-1 / mop2 B' Mop2-1 / Mop2-1 35SB-I

FIG. 29C



B' mop1-1 / mop1-1 B' Mop1 / mop1-1 35SB-I



FIG. 29B



rmr2-1 / rmr2-1 Rmr2 / rmr2-1 35SB-I

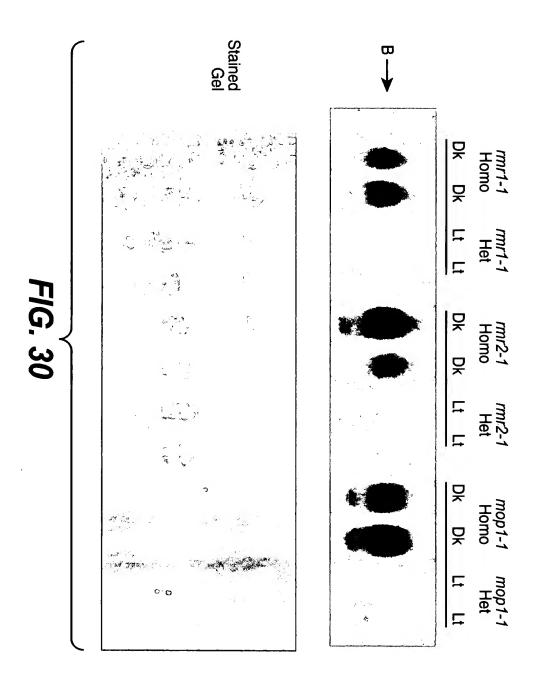
FIG. 29D



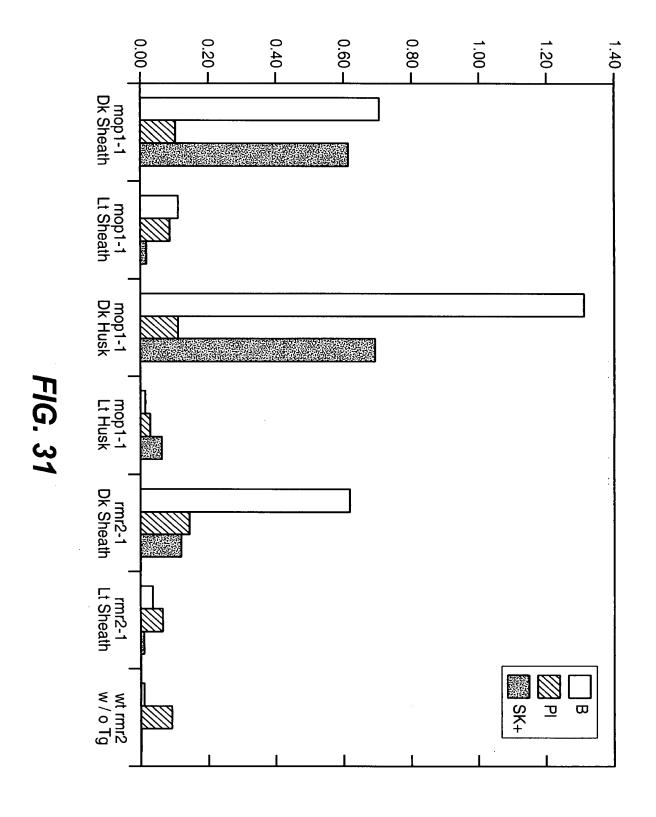
rmr1-1 / rmr1-1 Rmr1 / rmr1-1 35SB-I

FIG. 29E

Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805 Filed: October 5, 2001 Docket No.: 416272061200 SET 2 OF 3 REPLACEMENT FIGS. 29 of 32



Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805 Filed: October 5, 2001 Docket No.: 416272061200 SET 2 OF 3 REPLACEMENT FIGS. 30 of 32



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REPLACEMENT FIGS. 31 of 32

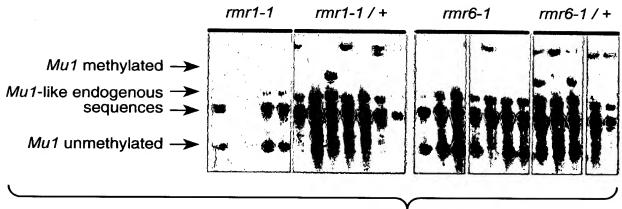


FIG. 32A

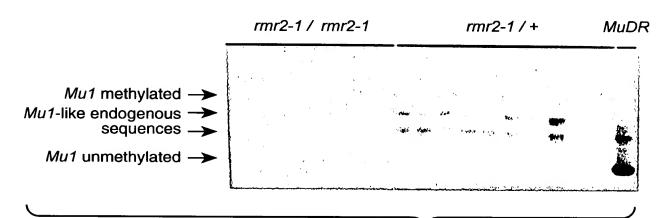


FIG. 32B

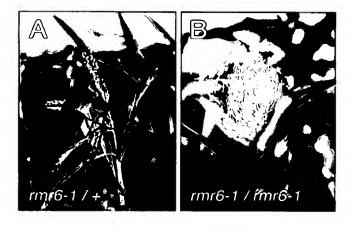


FIG. 33A FIG. 33B

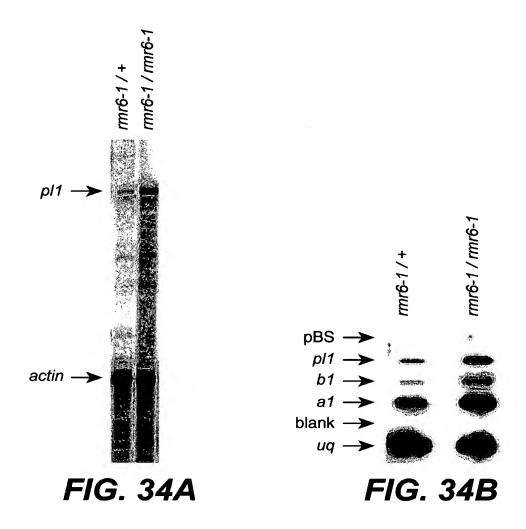
Title: GENETIC FUNCTIONS REQUIRED FOR

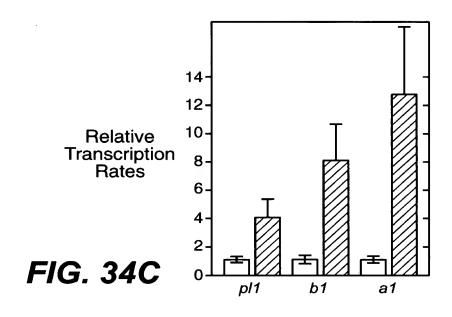
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REPLACEMENT FIGS. 32 of 32









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REPLACEMENT FIGS. 1 of 32

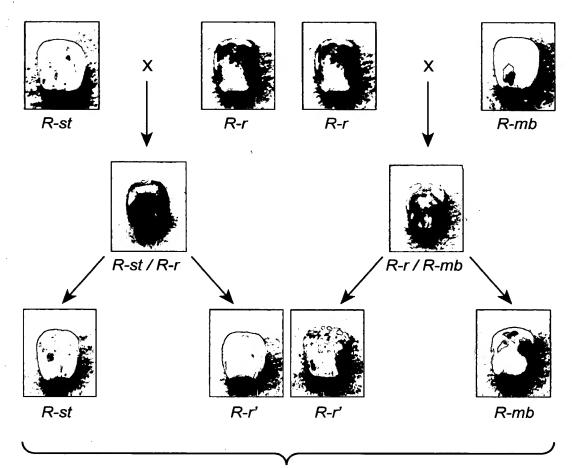
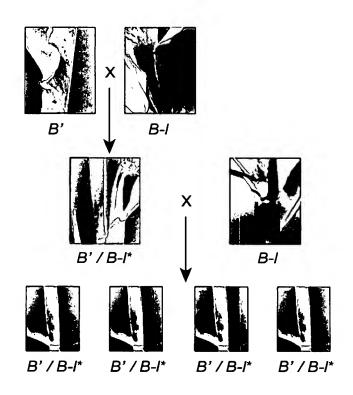


FIG. 1A

Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805 Filed: October 5, 2001 Docket No.: 416272061200 SET 3 OF 3 REPLACEMENT FIGS. 2 of 32



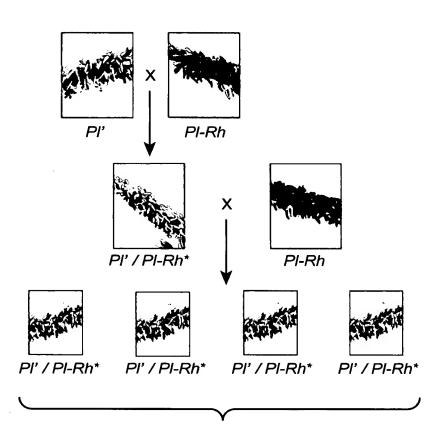


FIG. 1B

Title: GENETIC FUNCTIONS REQUIRED FOR

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Paramutable

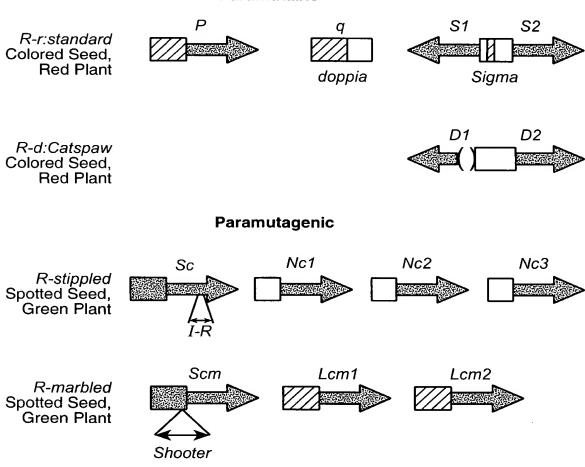


FIG. 2A

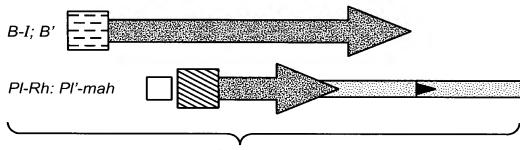


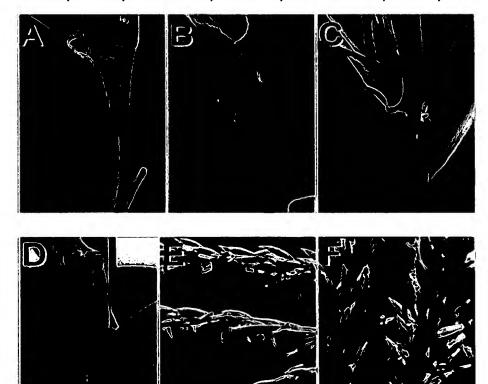
FIG. 2B

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FIG. 3A FIG. 3B FIG. 3C

B' Mop1/mop1-1 B' mop1-1/mop1-1 B-I Mop1/Mop1



B' Sectors in a B' mop1-1 Plant

Pl' Mop1 / -

Pl' mop1-1 / mop1-1

FIG. 3D FIG. 3E FIG. 3F

Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805 Filed: October 5, 2001 Docket No.: 416272061200 SET 3 OF 3 REPLACEMENT FIGS. 5 of 32 <u>B'</u> mop1-1 B' mop1-1 Gametes produced if B' is heritably altered to B-I ($B' \longrightarrow B-I$): <u>B-I Mop1</u> _____ <u>B-I Mop1</u> B-I mop1-1 X Dark B-I Mop1 B-I mop1-1 plants Gametes produced if B' is not heritably altered to B-I ($B' \longrightarrow B-I$): <u>B-I Mop1</u> ______ (B-I)' <u>Mop1</u> B' mop 1-1 XLight B-I Mop1 B' mop1-1 plants FIG. 4A <u>Pl' mop1-1</u> Pl' mop1-1 Gametes produced if Pl' is heritably altered to Pl-Rh (Pl' ----Pl-Rh): Pl-Rh mop1-1 X <u>Pl-Rh Mop1</u> → <u>Pl-Rh Mop1</u> Dark Pl-Rh Mop1 Pl-Rh mop1-1 anthers Gametes produced if Pl' is not heritably altered to Pl-Rh ($Pl' - X \rightarrow Pl$ -Rh): Pl' mop1-1 X Pl-Rh Mop1 $\underline{\hspace{0.1in}}$ $\underline{\hspace{0.1in}}$ $\underline{\hspace{0.1in}}$ $\underline{\hspace{0.1in}}$ $\underline{\hspace{0.1in}}$ Light

FIG. 4B

mop1-1 anthers

Pl-Rh Mop1

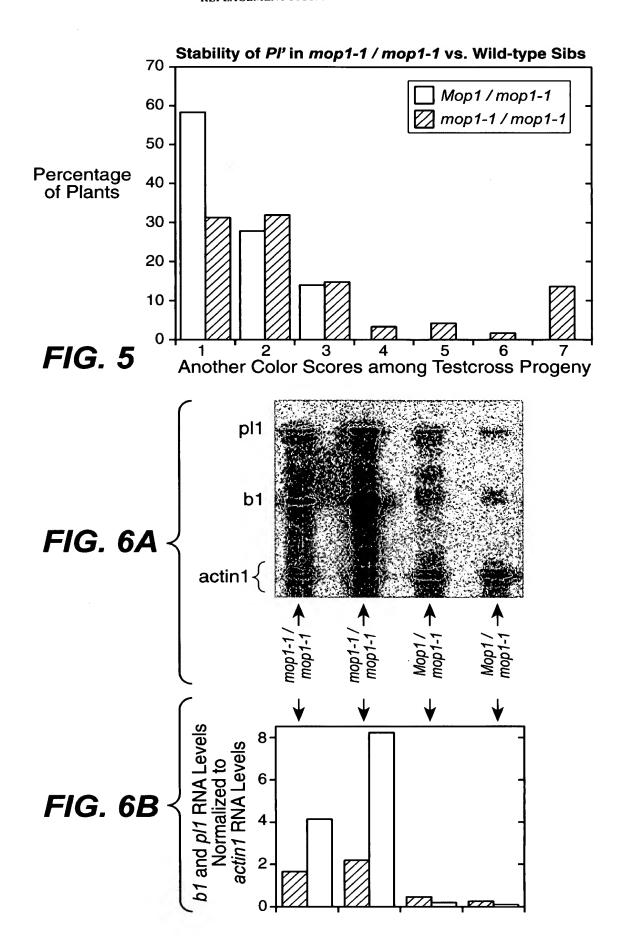
Title: GENETIC FUNCTIONS REQUIRED FOR

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REPLACEMENT FIGS. 6 of 32



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REPLACEMENT FIGS. 7 of 32

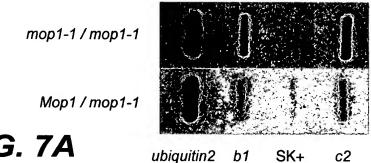
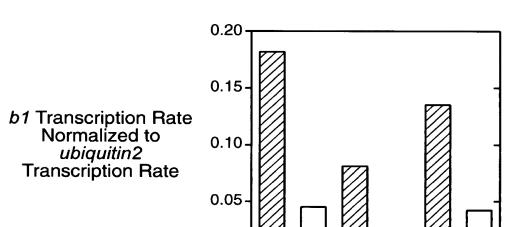
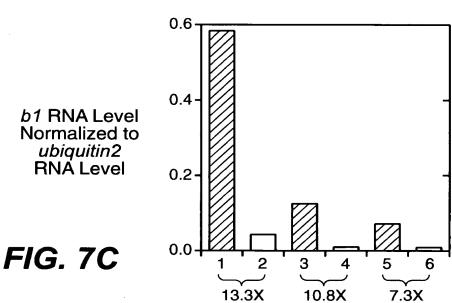


FIG. 7A



0.00

FIG. 7B



2

3.0X

3.6X

4.5X

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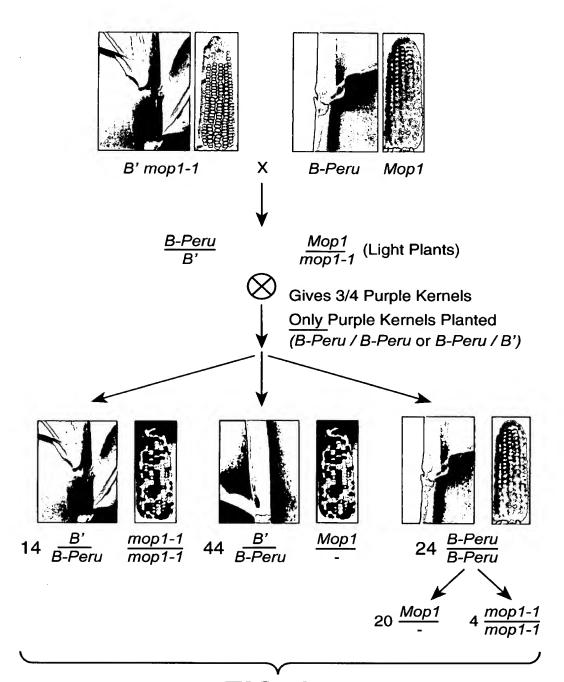
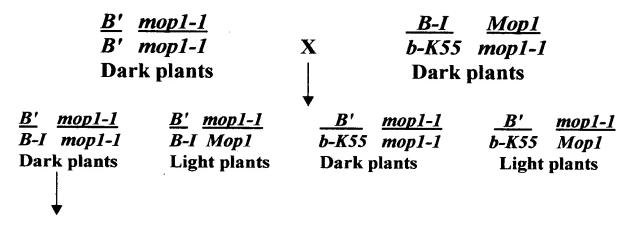


FIG. 8

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Testcross (by B-Peru/B-I Mop1/Mop1 tester-diagram shows only B-Peru gametes of tester)

Gametes produced if paramutation is prevented ($B-I \longrightarrow B'$):

50% B' mopl-1 X B-Peru Mopl
$$\longrightarrow$$
 B' mopl-1 Light B-Peru Mopl plants

50% B-I mopl-1 X B-Peru Mopl \longrightarrow B-I mopl-1 Dark B-Peru Mopl plants

Gametes produced if paramutation occurred (B-I \longrightarrow B'):

100% B' mop1-1 X B-Peru Mop1 — B' mop1-1 Light B-Peru Mop1 plants

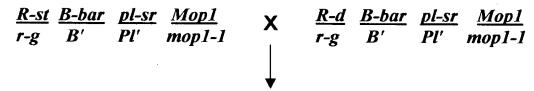
FIG. 9

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REPLACEMENT FIGS. 10 of 32



Four genotypes of interest among R-d/- Pl'/- progeny:

<u>3</u>	<u>R-d</u>	<u>Mop1</u>	Light plant
16	r-g	-	
<u>3</u>	<u>R-d</u>	<u>Mop1</u>	Light plant
16	R-st	-	
<u>1</u>	<u>R-d</u>	<u>mop1-1</u>	Dark plant
16	r-g	mop1-1	
<u>1</u>	<u>R-d</u>	<u>mop1-1</u>	Dark plant
16	R-st	mop1-1	

FIG. 10A

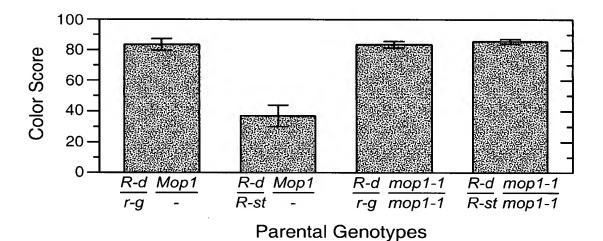


FIG. 10B

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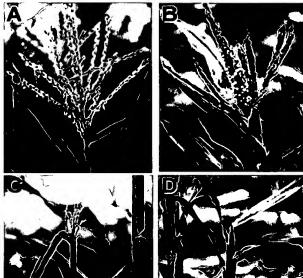
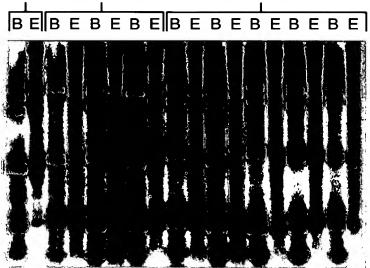


FIG. 11B

FIG. 11C

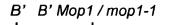


FIG. 11D



B' B' Mop1 / mop1-1 B' mop1-1 / mop1-1

FIG. 12A



B' mop1-1 / mop1-1

ПМ|Н М Н М Н М Н М Н М Н М Н М

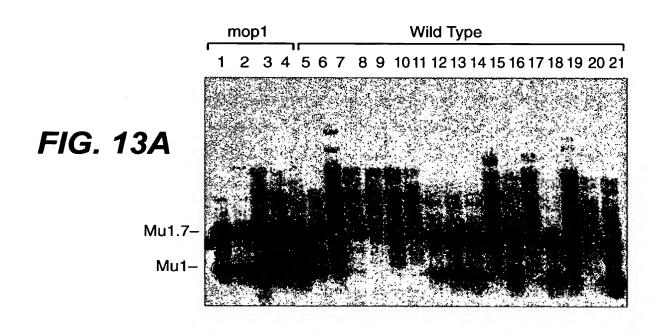
FIG. 12B

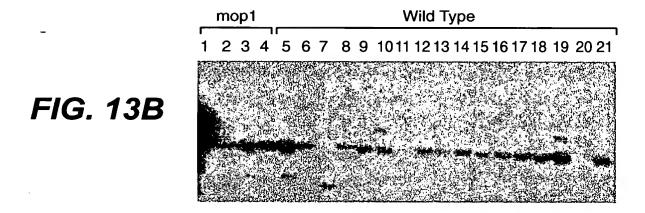


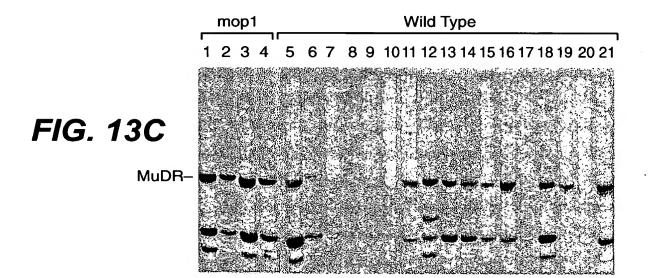
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REPLACEMENT FIGS. 12 of 32







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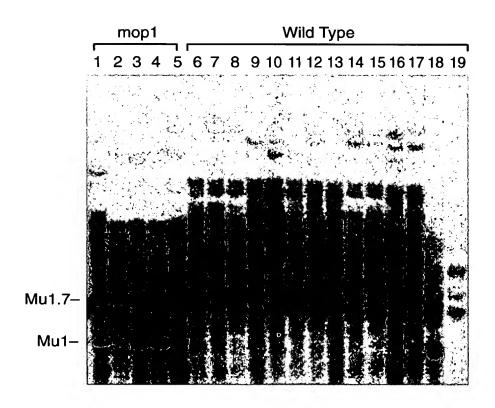


FIG. 14A

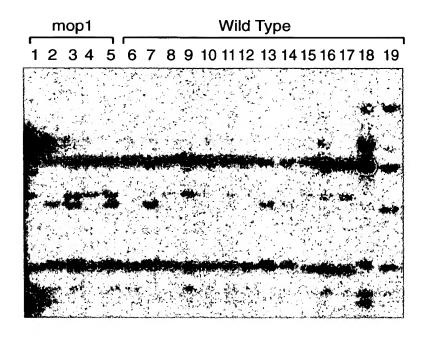


FIG. 14B

Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805

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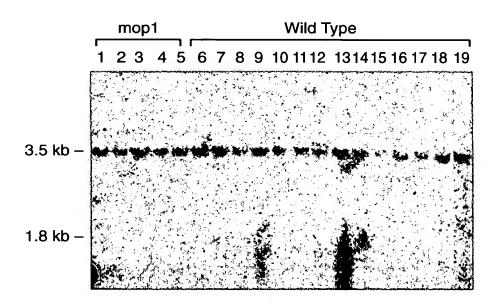


FIG. 14C

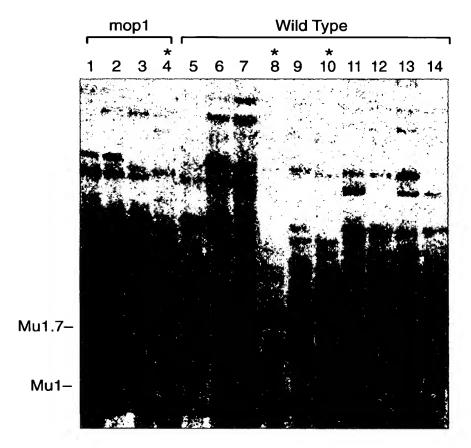


FIG. 14D

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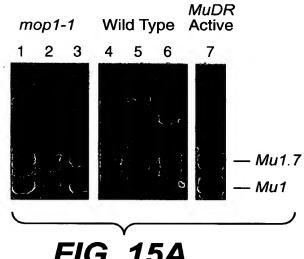


FIG. 15A

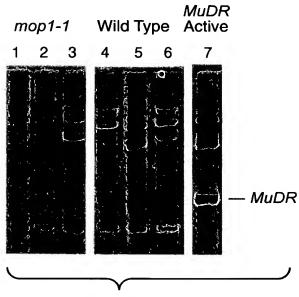
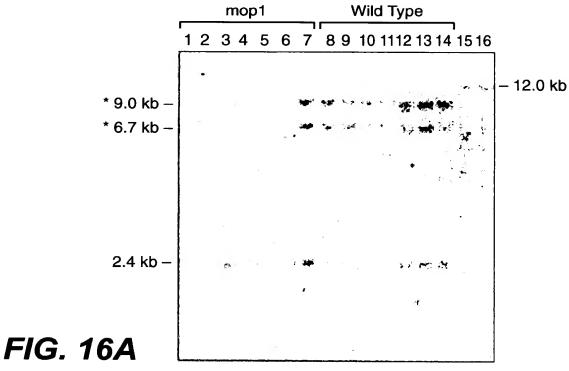


FIG. 15B

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ApaI / BamHI Digest

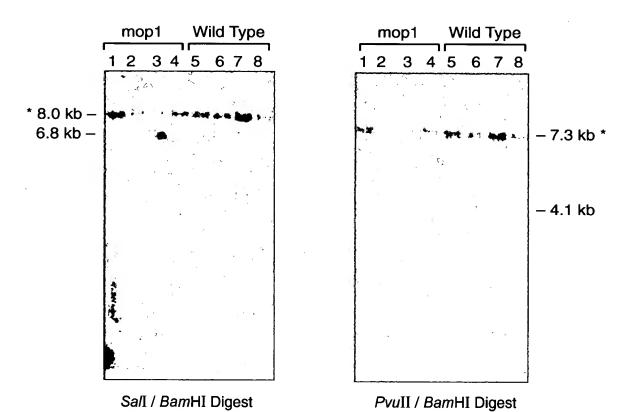


FIG. 16C

FIG. 16B

Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805 Filed: October 5, 2001 Docket No.: 416272061200 SET 3 OF 3 REPLACEMENT FIGS. 17 of 32



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REPLACEMENT FIGS. 18 of 32

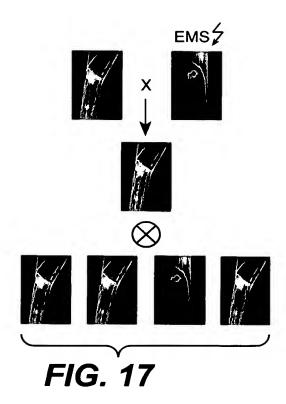




FIG. 18A

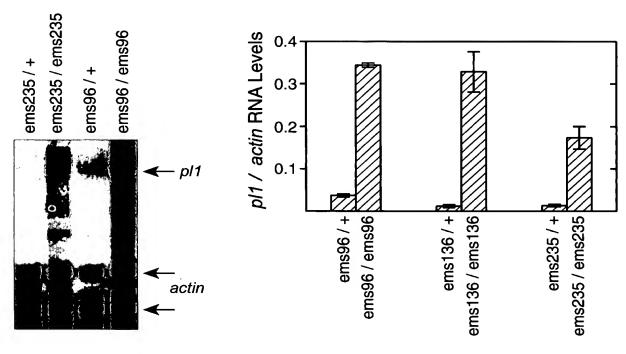
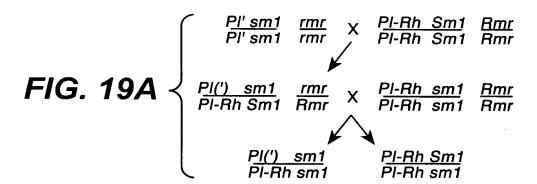


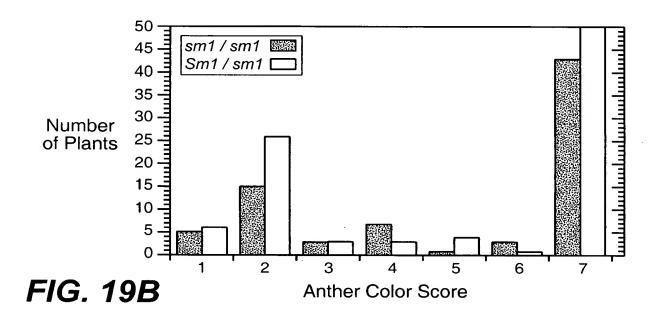
FIG. 18B

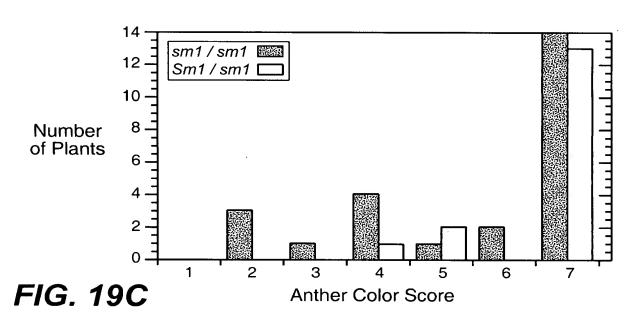
FIG. 18C

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REPLACEMENT FIGS. 20 of 32

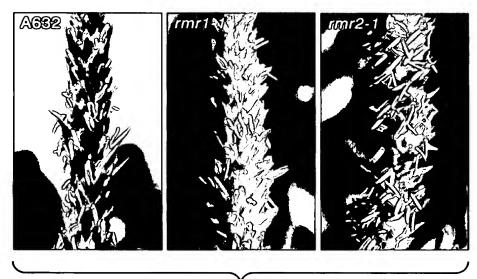
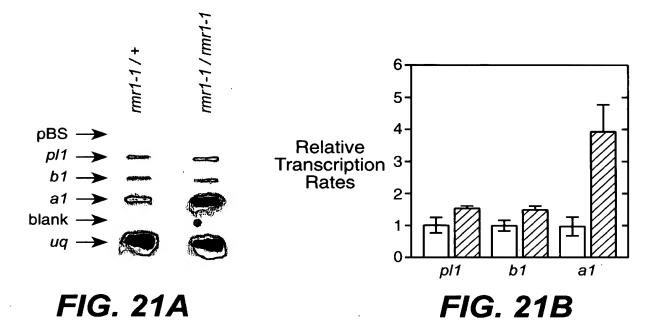


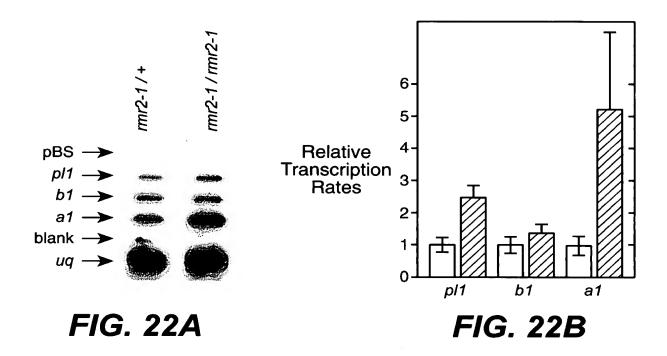
FIG. 20

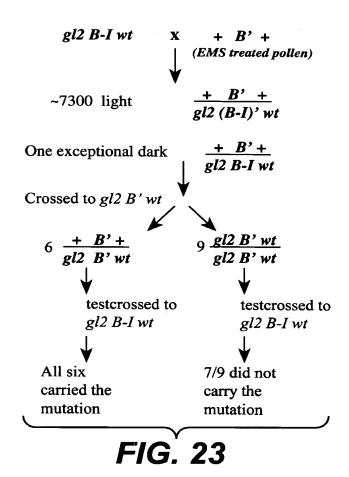


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REPLACEMENT FIGS. 21 of 32



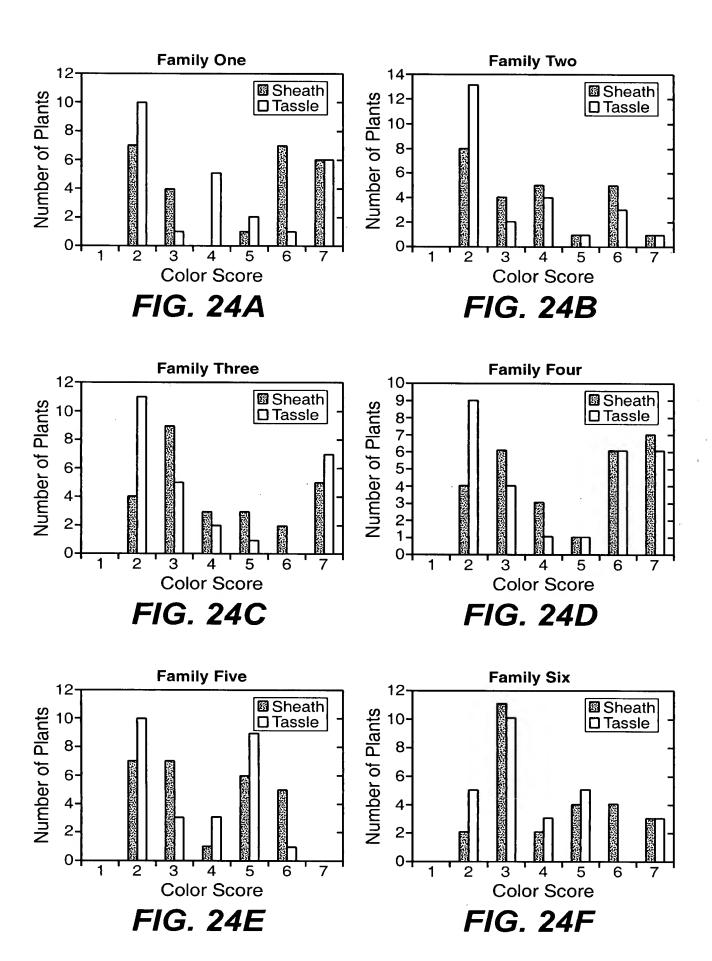


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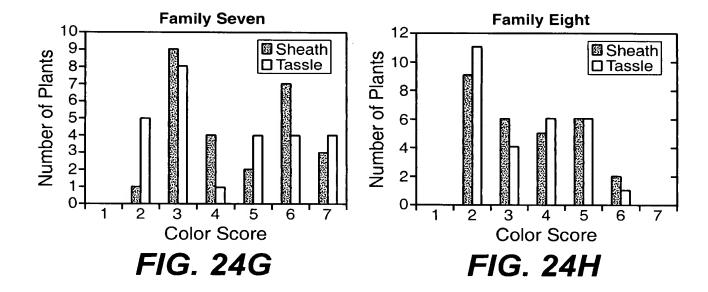
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REPLACEMENT FIGS. 22 of 32



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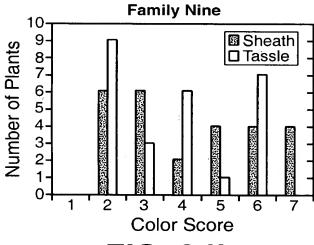


FIG. 241

Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805

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REPLACEMENT FIGS. 24 OF 32

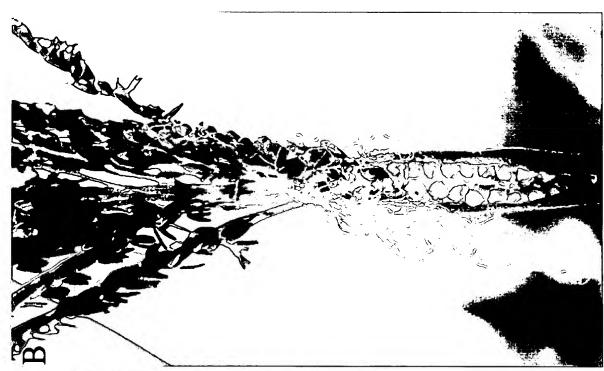




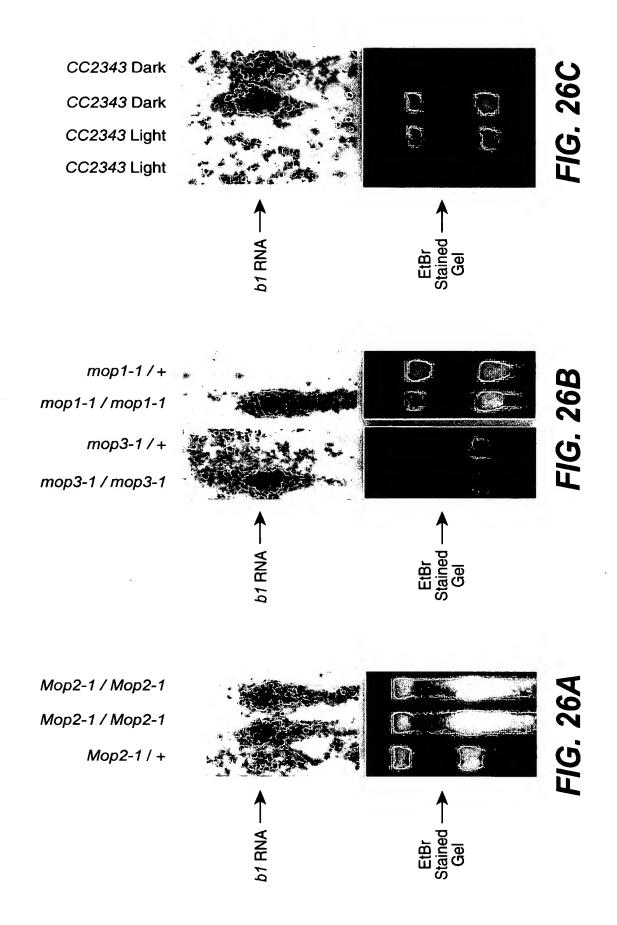
FIG. 25B

FIG. 25A

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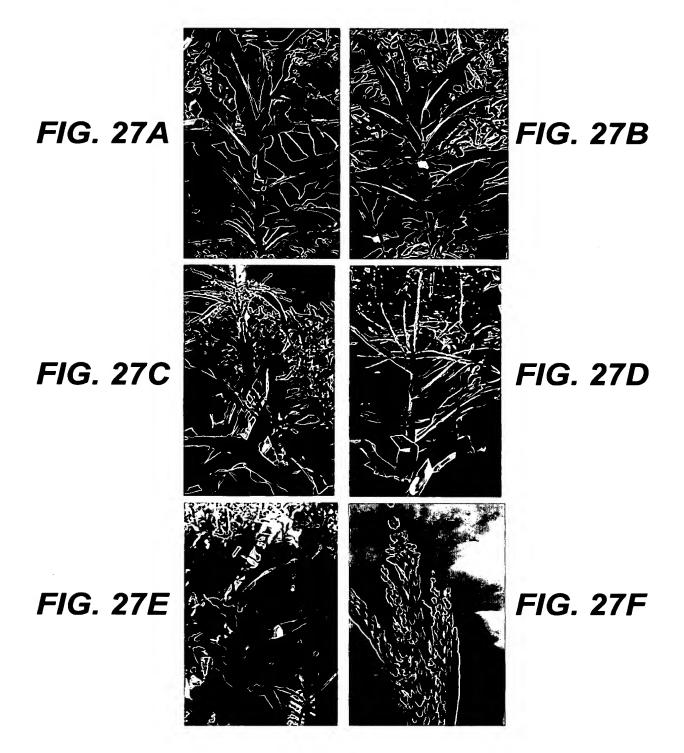


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REPLACEMENT FIGS. 26 of 32



Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805 Filed: October 5, 2001 Docket No.: 416272061200 SET 3 OF 3 REPLACEMENT FIGS. 27 of 32 Vector Backbone Vector Backbone B-I Transcribed Region B-I Transcribed Region Bar Bar adh1 Intron

エ・ I **B-Bolivia Promoter** 35 S Promoter 图35 S Promoter 图35 S Promoter I 35SB-Igen BBBS

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FIG. 29A



B' Mop2-1 / mop2 B' Mop2-1 / Mop2-1 35SB-I

FIG. 29C



B' mop1-1 / mop1-1 B' Mop1 / mop1-1 35SB-I



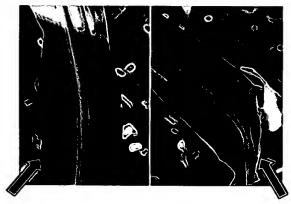


rmr2-1 / rmr2-1 Rmr2 / rmr2-1 35SB-I

FIG. 29D



rmr1-1 / rmr1-1 Rmr1 / rmr1-1 35SB-I



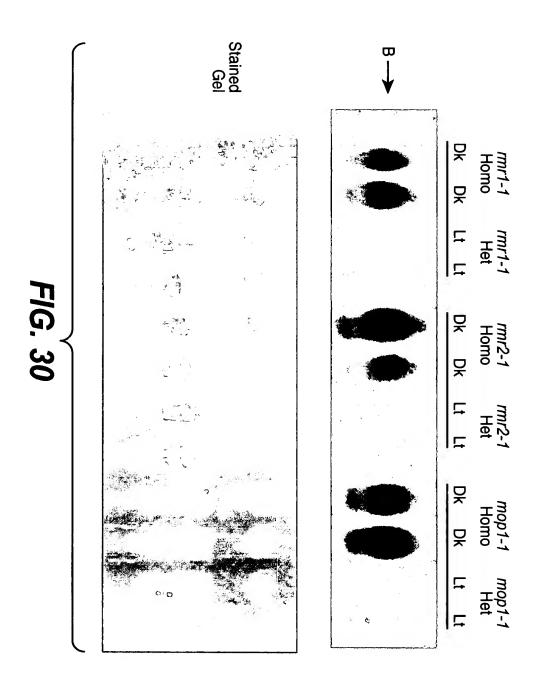
BBBS

Rmr2 / rmr2-1

rmr2-1 / rmr2-1

FIG. 29E

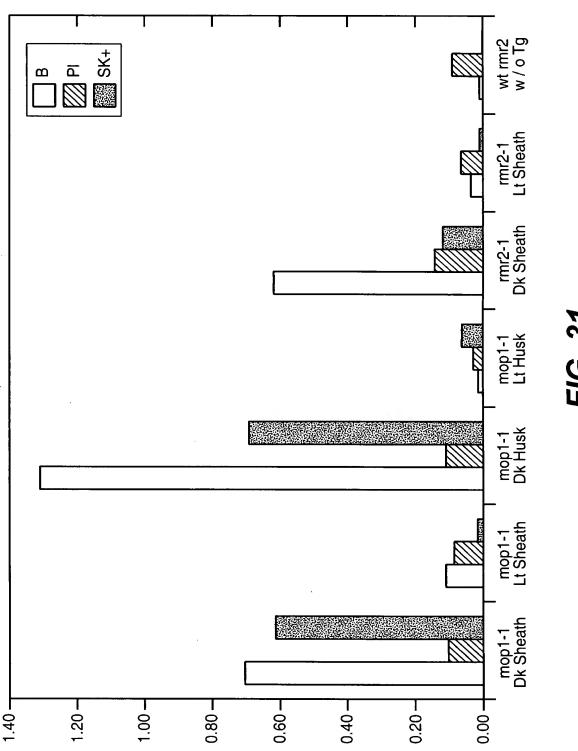
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REPLACEMENT FIGS. 31 of 32

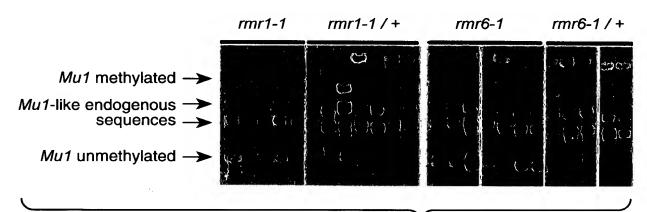


FIG. 32A

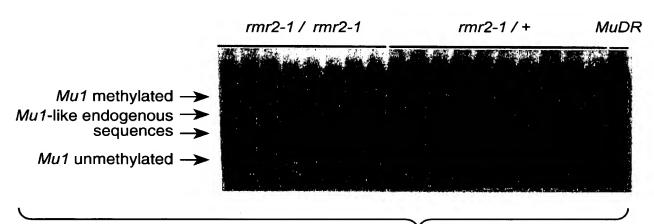


FIG. 32B

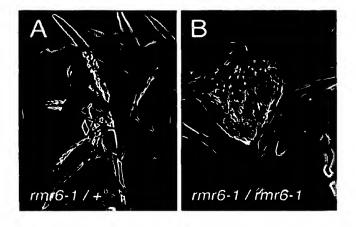
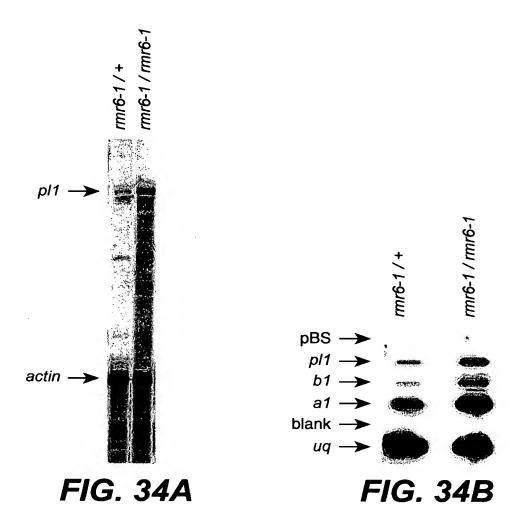


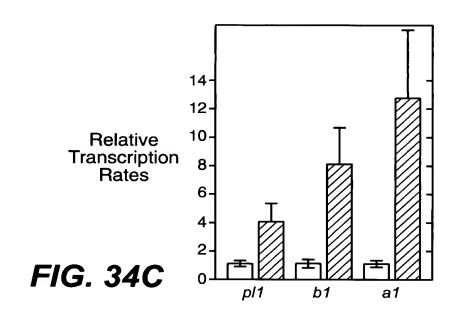
FIG. 33A FIG. 33B

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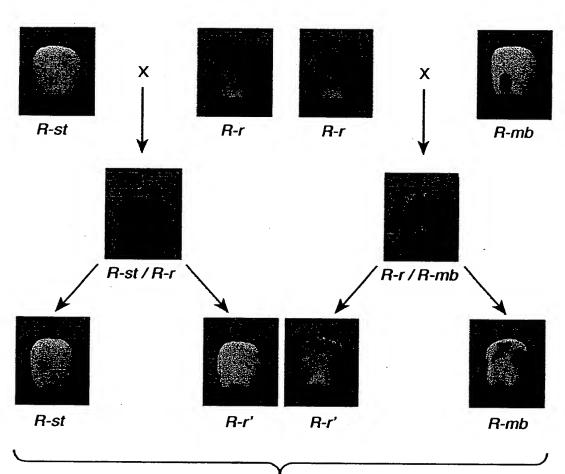


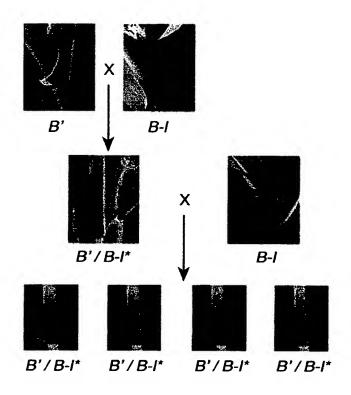
FIG._1A

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REPLACEMENT FIGS. 2 of 32

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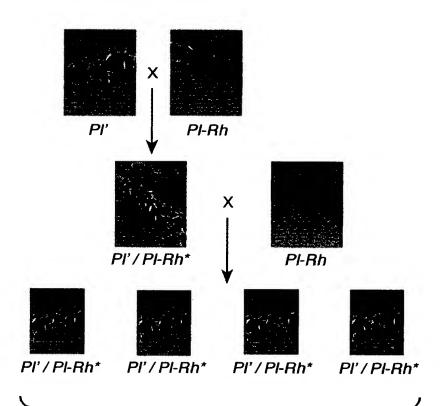


FIG._1B

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REPLACEMENT FIGS. 3 of 32

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Paramutable

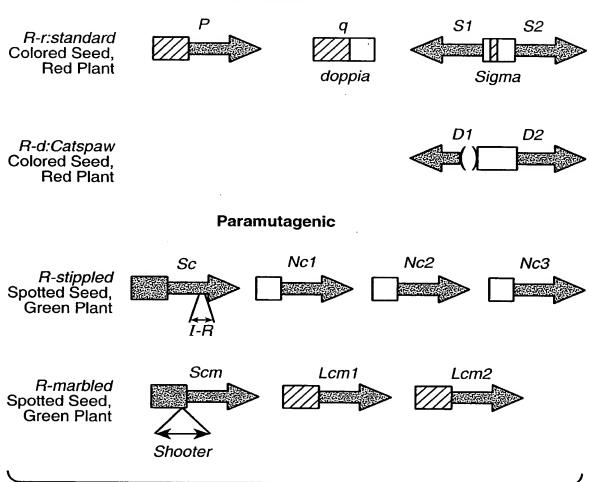


FIG._2A

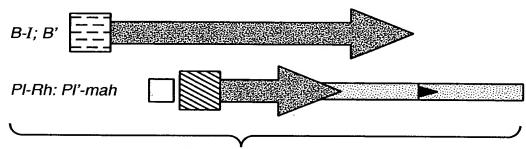


FIG._2B

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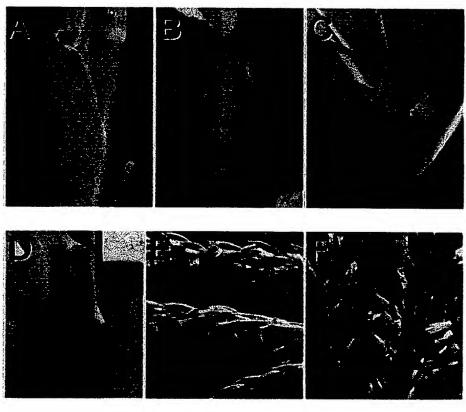
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REPLACEMENT FIGS. 4 of 32

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FIG._3A FIG._3B FIG._3C

B'Mop1 / mop1-1 B' mop1-1 / mop1-1 B-I Mop1 / Mop1



B' Sectors in a B' mop1-1 Plant

Pl' Mop1 / -

Pl' mop1-1 / mop1-1

FIG._3D FIG._3E FIG._3F

Title: GENETIC FUNCTIONS REQUIRED FOR GENE SILENCING IN MAIZE Serial No: 09/972,805 Filed: October 5, 2001 Docket No.: 416272061200 BLACK & WHITE **REPLACEMENT FIGS. 5 of 32** 5/32 <u>B' mop1-1</u> B' mop1-1 Gametes produced if B' is heritably altered to B-I ($B' \longrightarrow B-I$): <u>B-I Mop1</u> _____ <u>B-I Mop1</u> B-I mop1-1 X Dark B-I mop1-1 B-I Mop1 plants Gametes produced if B' is not heritably altered to B-I ($B' - X \rightarrow B-I$): B'mop1-1 X <u>B-I Mopl</u> ______ (B-I)' <u>Mopl</u> Light $B' \quad mop 1-1$ B-I Mop1 plants FIG._4A <u>Pl' mop1-1</u> Pl' mop1-1 Gametes produced if Pl' is heritably altered to Pl-Rh (Pl' -----Pl-Rh): Pl-Rh mop1-1 X <u>Pl-Rh Mop1</u> → <u>Pl-Rh Mop1</u> Dark Pl-Rh Mop1 Pl-Rh mop1-1 anthers Gametes produced if Pl' is not heritably altered to Pl-Rh ($Pl' - X \rightarrow Pl-Rh$):

 $Pl' mop 1-1 \ X \qquad \underline{Pl-Rh} \quad \underline{Mop 1} \qquad \underline{Pl-Rh}' \quad \underline{Mop 1} \qquad \underline{Pl' \quad mop 1-1} \quad \text{Light}$

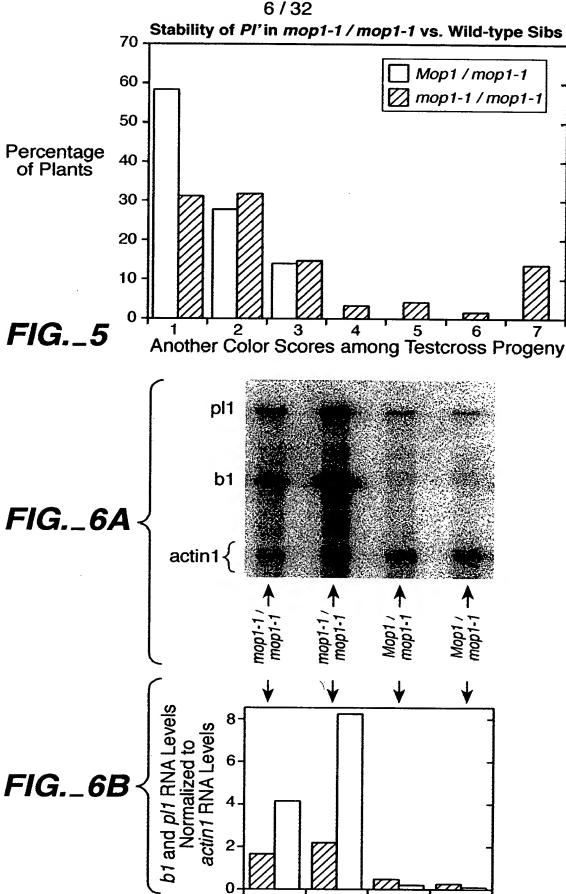
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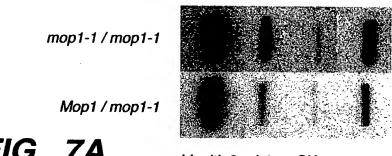
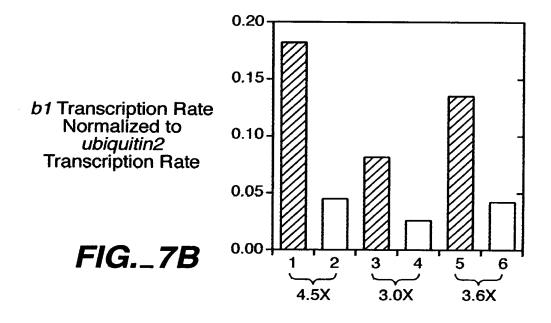
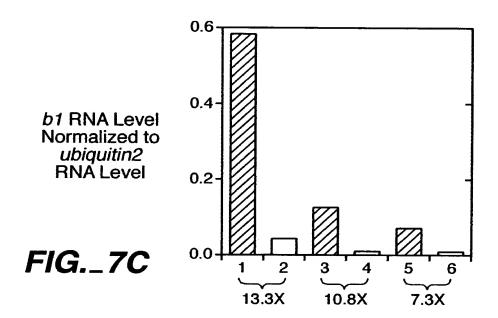


FIG._7A

ubiquitin2 b1 SK+ *c2*





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REPLACEMENT FIGS. 8 of 32

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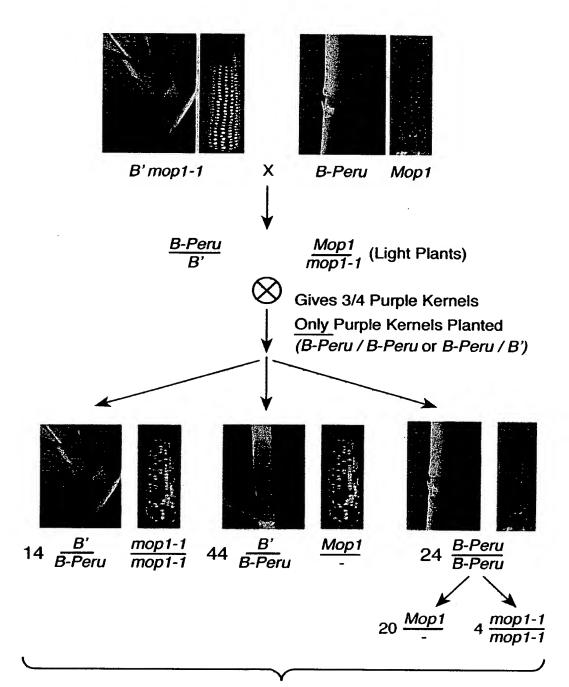


FIG._8

GENE SILENCING IN MAIZE

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mop1-1 B-I Mop1 mop1-1 b-K55 mop1-1 Dark plants Dark plants **B'** mop1-1 <u>B' mop1-1</u> mop1-1 mop1-1 **B-I** mop1-1 B-I Mop1 b-K55 mop1-1 Mop1 b-K55 Dark plants Light plants Light plants Dark plants Testcross (by B-Peru/B-I Mop1/Mop1 tester-diagram shows only B-Peru gametes of tester) Gametes produced if paramutation is prevented (B- $I \longrightarrow B'$): 50% B' mop1-1 X B-Peru Mop1 **▶** <u>B'</u> mop1-1 Light B-Peru Mopl plants B-Peru Mopl 50% B-I mop1-1 X mop1-1 Dark B-Peru Mopl plants Gametes produced if paramutation occurred ($B-I \longrightarrow B'$):

B-Peru Mopl

mop1-1

B-Peru Mop1

Light

plants

100% B' mop1-1 X

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REPLACEMENT FIGS. 10 of 32

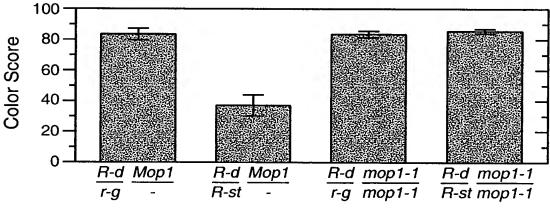
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$$\frac{R\text{-st}}{r\text{-g}} \frac{B\text{-bar}}{B'} \frac{pl\text{-sr}}{Pl'} \frac{Mop1}{mop1\text{-}1} \qquad \qquad \underbrace{\frac{R\text{-d}}{r\text{-g}} \frac{B\text{-bar}}{B'} \frac{pl\text{-sr}}{Pl'} \frac{Mop1}{mop1\text{-}1}}_{mop1\text{-}1}$$

Four genotypes of interest among R-d/- Pl'/- progeny:

<u>3</u>	<u>R-d</u>	<u>Mop1</u>	Light plant
16	r-g	-	
<u>3</u>	<u>R-d</u>	<u>Mop1</u>	Light plant
16	R-st	-	
<u>1</u>	<u>R-d</u>	<u>mop1-1</u>	Dark plant
16	r-g	mop1-1	
<u>1</u>	R-d	<u>mop1-1</u>	Dark plant
16	R-st	mop1-1	

FIG._10A



Parental Genotypes

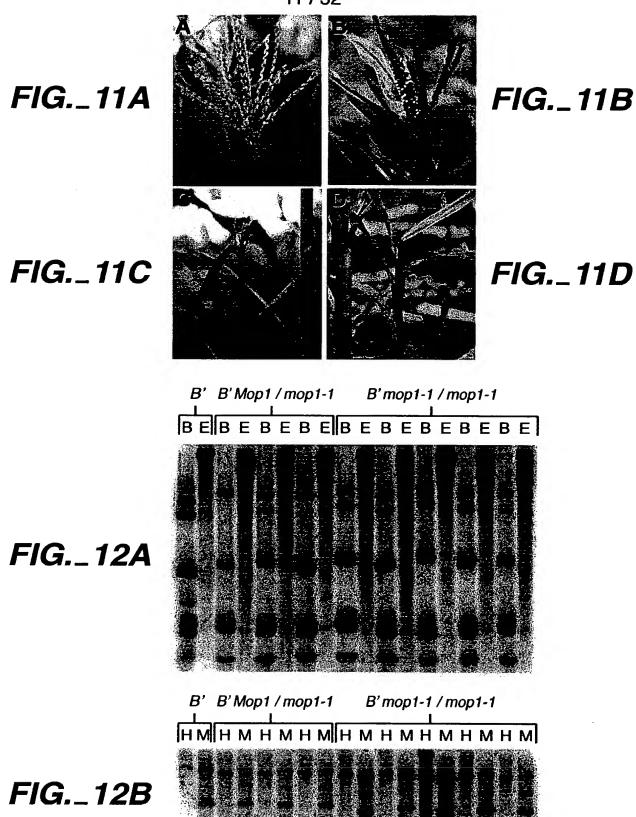
FIG._10B

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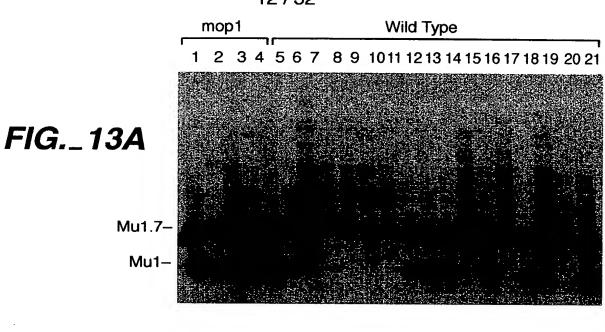


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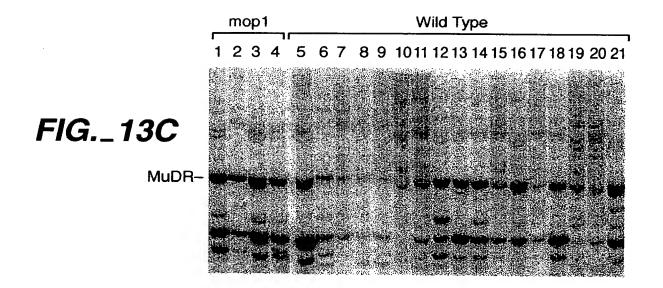




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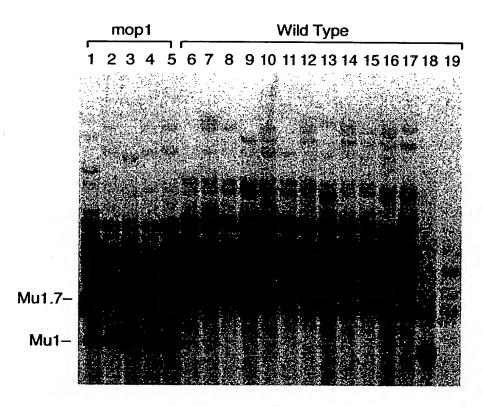


FIG._14A

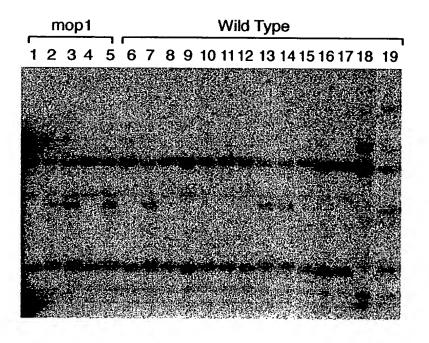


FIG._14B

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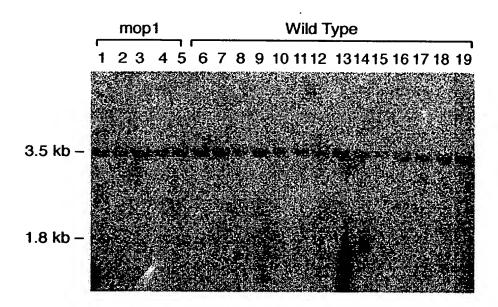


FIG._14C

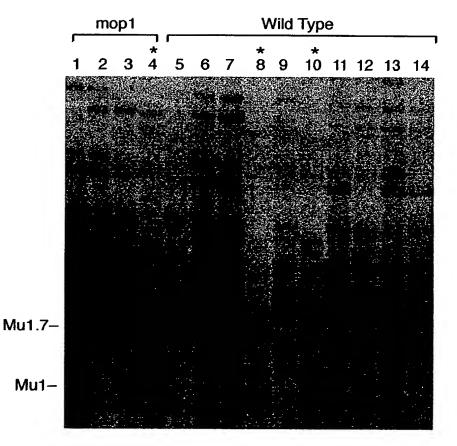
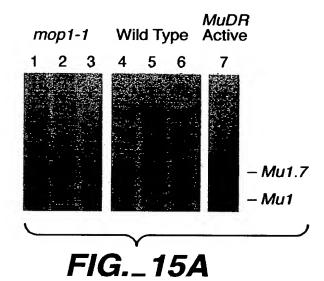


FIG._14D

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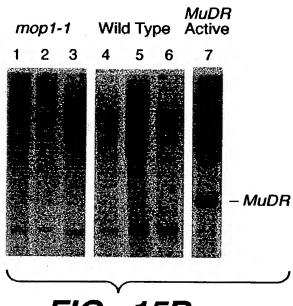


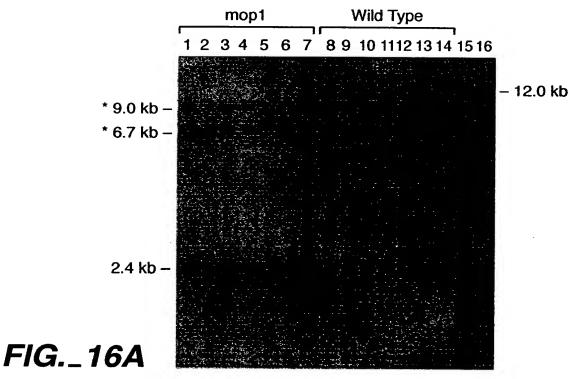
FIG._15B

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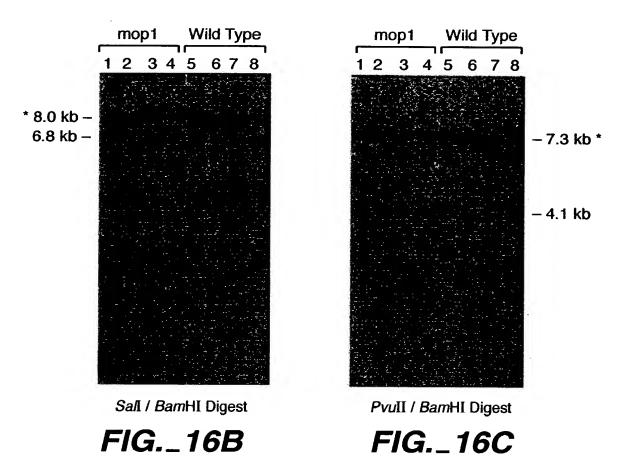
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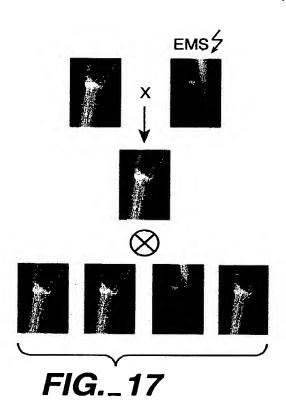
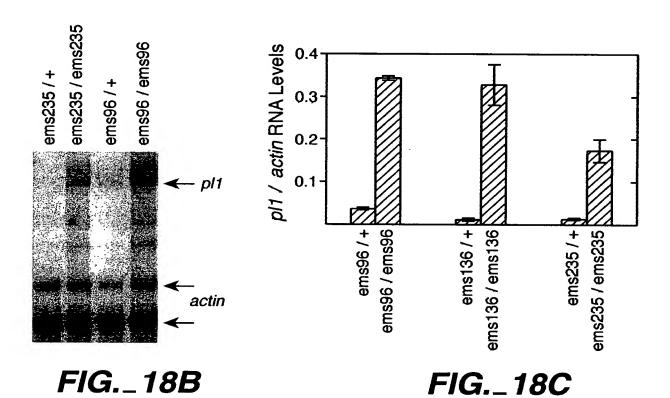




FIG._18A



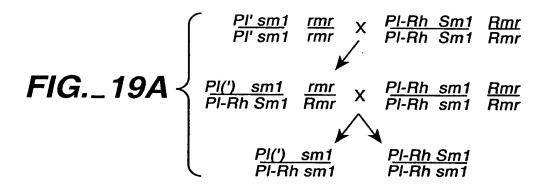
GENE SILENCING IN MAIZE

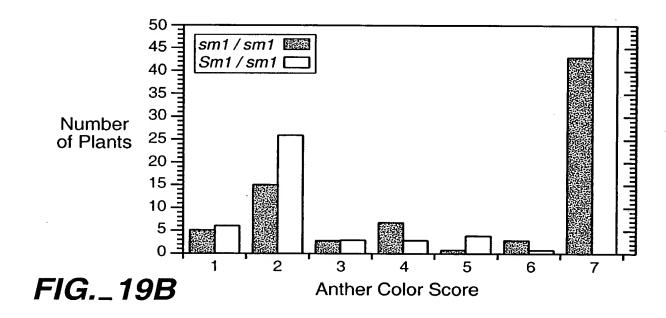
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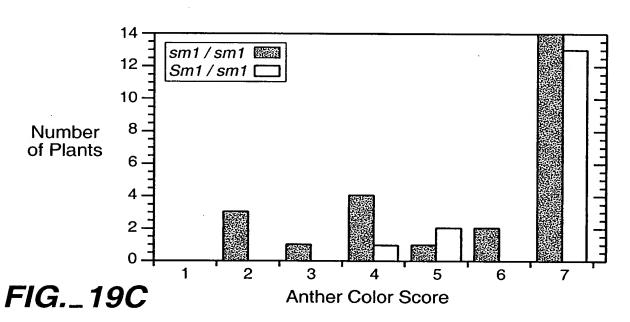
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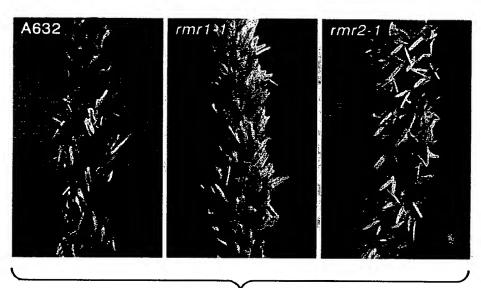
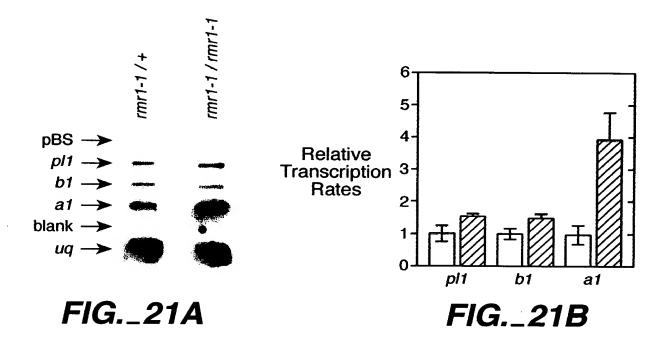


FIG._20

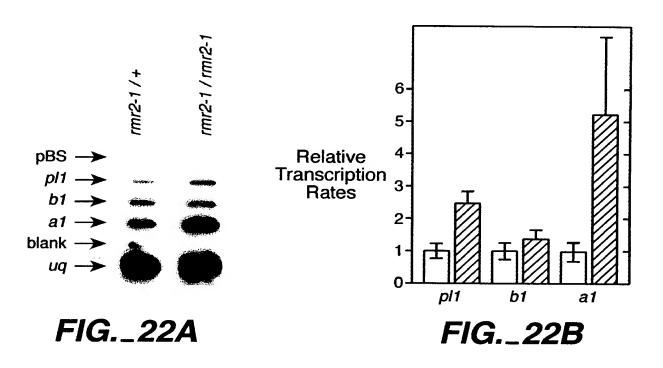


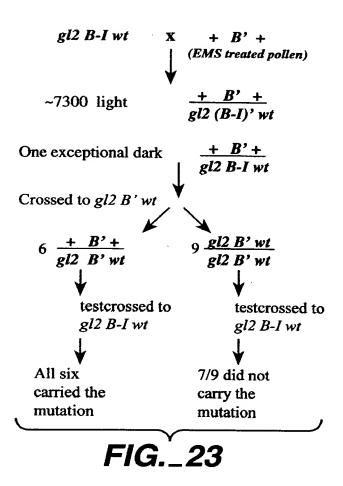
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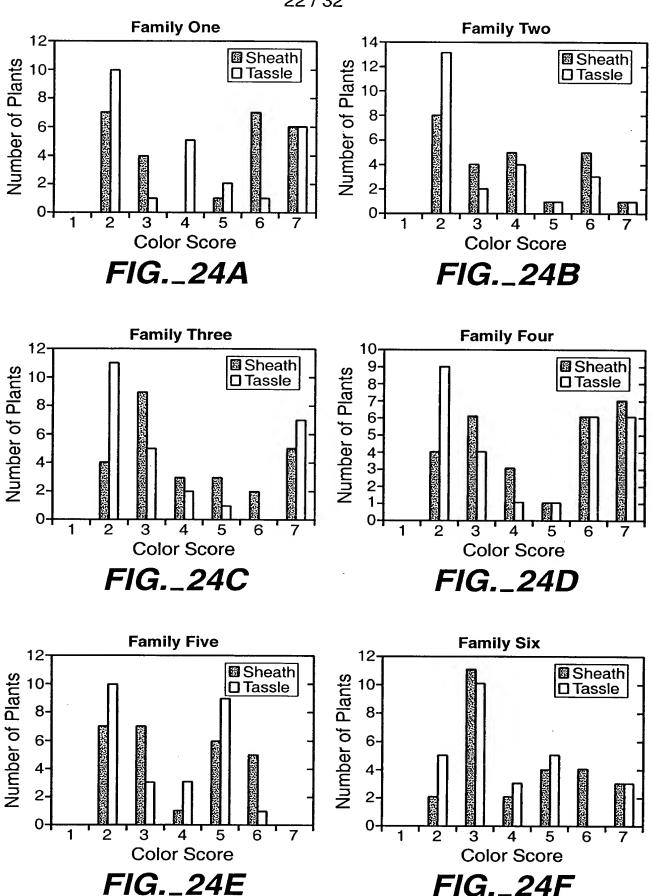
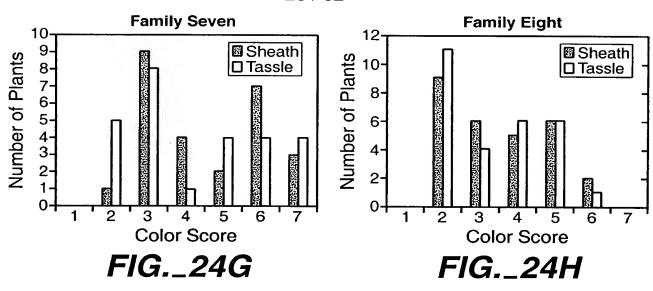


FIG._24F

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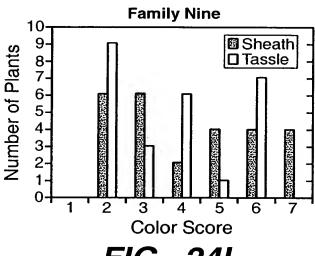


FIG._241

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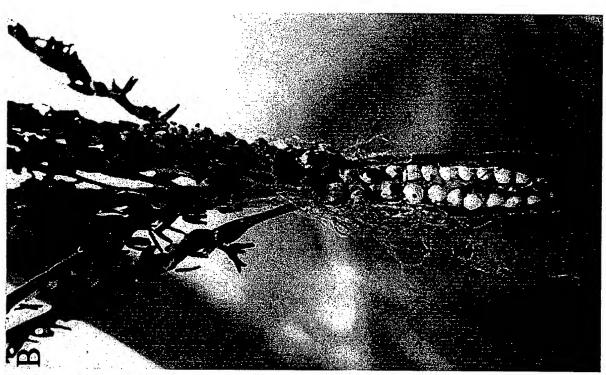




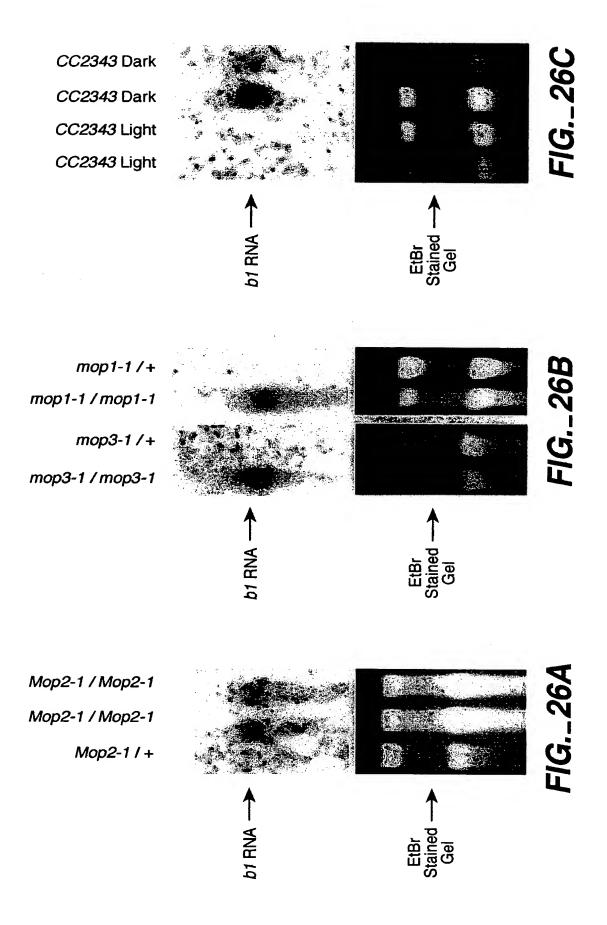
FIG._25B

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FIG._27A









FIG._27B



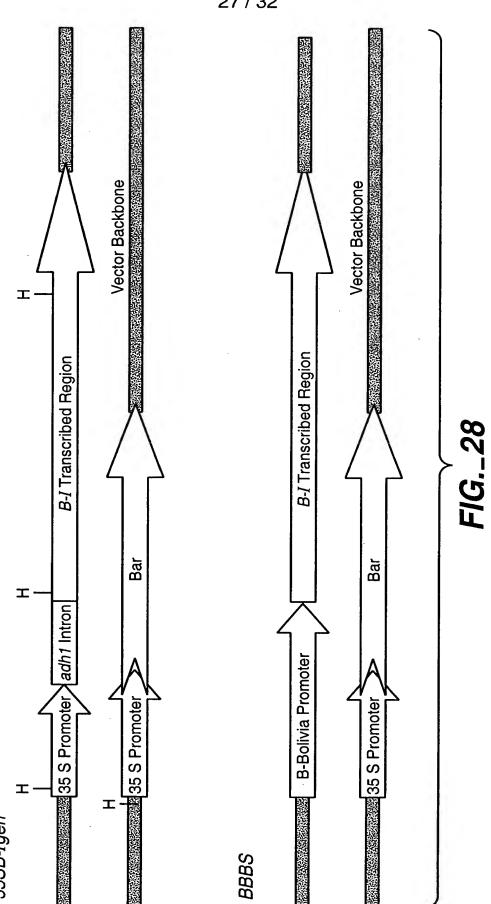


FIG._27F

FIG._27E

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FIG._29A



B' Mop2-1 / mop2 B' Mop2-1 / Mop2-1 35SB-I

FIG._29B



rmr2-1 / rmr2-1 Rmr2 / rmr2-1 35SB-I

FIG._29C

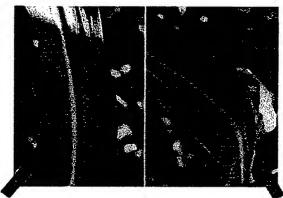


B'mop1-1 / mop1-1 B'Mop1 / mop1-1 35SB-I

FIG._29D



Rmr1 / rmr1-1 rmr1-1 / rmr1-1 35SB-I



BBBS

Rmr2 / rmr2-1



rmr2-1 / rmr2-1

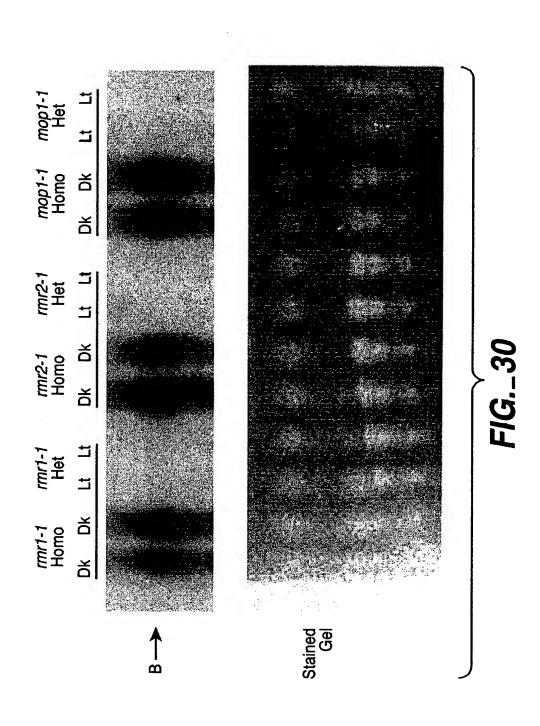
FIG._29E

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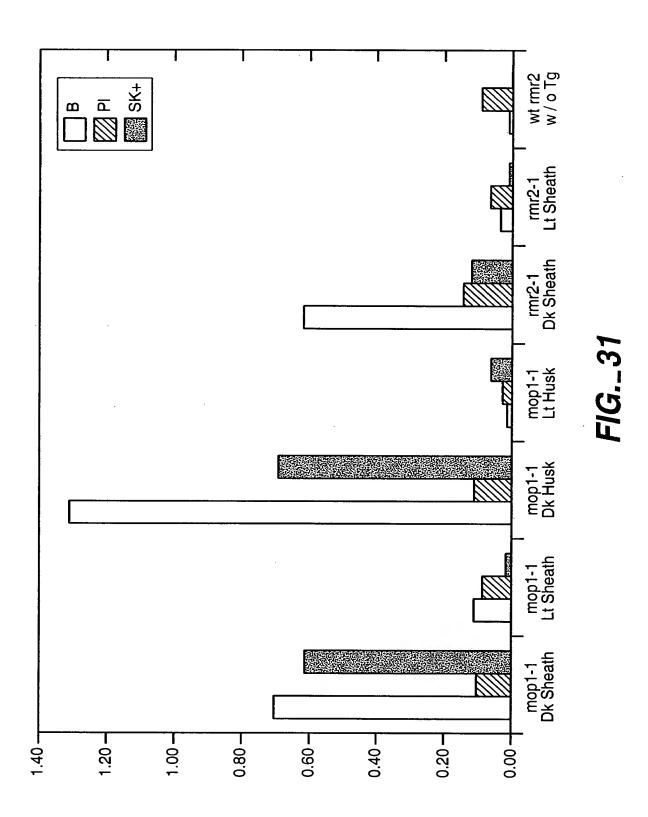
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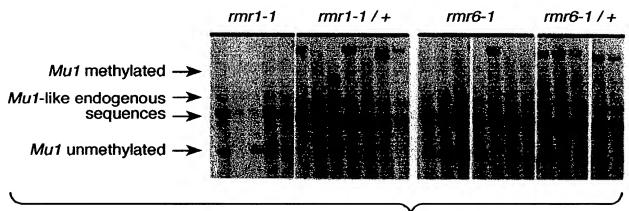


FIG. 32A

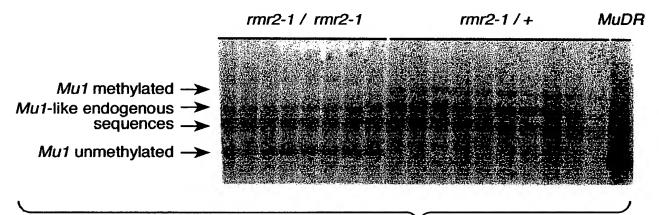


FIG._32B

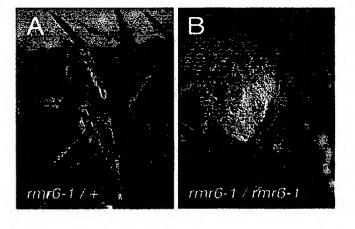


FIG._33A FIG._33B

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